

Burbank, Luther

INFORMATION FILE

RECEIVED MAR 19 1924



Lafayette National Park.

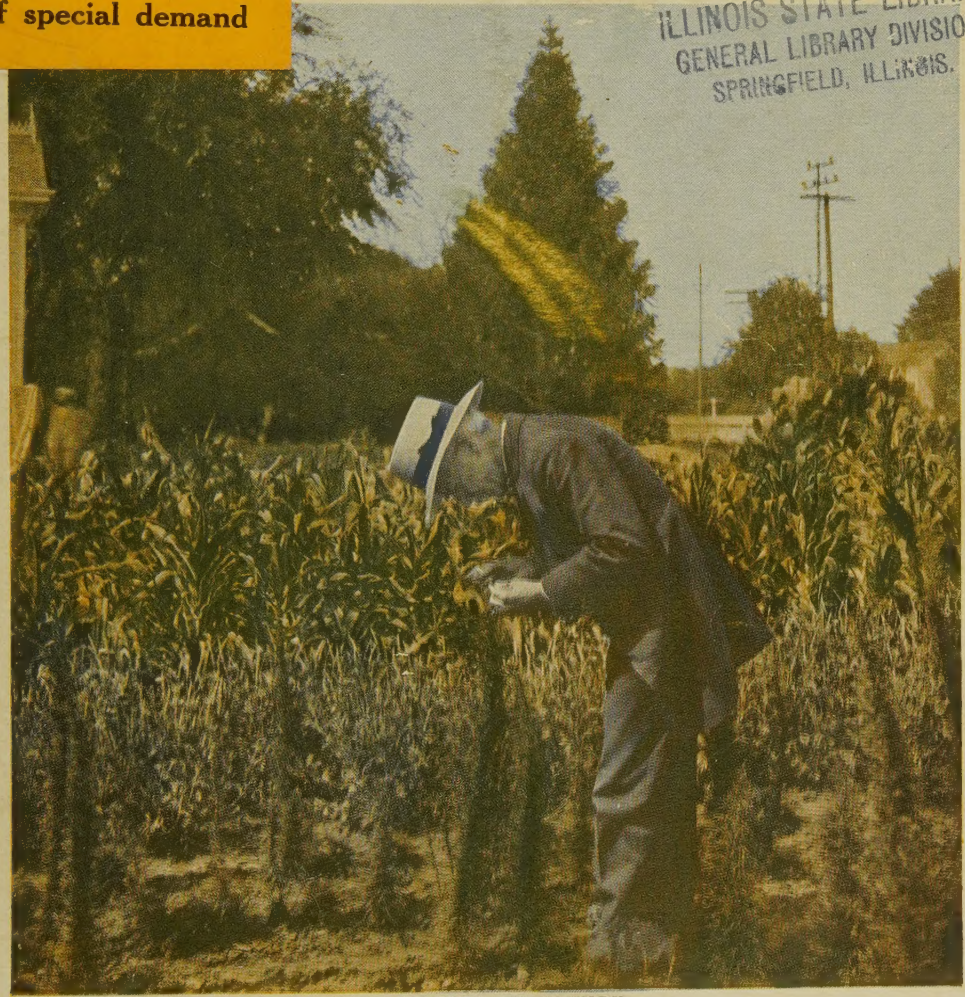
The MENTOR

THIRTY-FIVE
CENTS A COPY

This book may be kept
7 Days
only
It Cannot Be Renewed
because of special demand

AUGUST 1923

ILLINOIS STATE LIBRARY
GENERAL LIBRARY DIVISION
SPRINGFIELD, ILLINOIS.

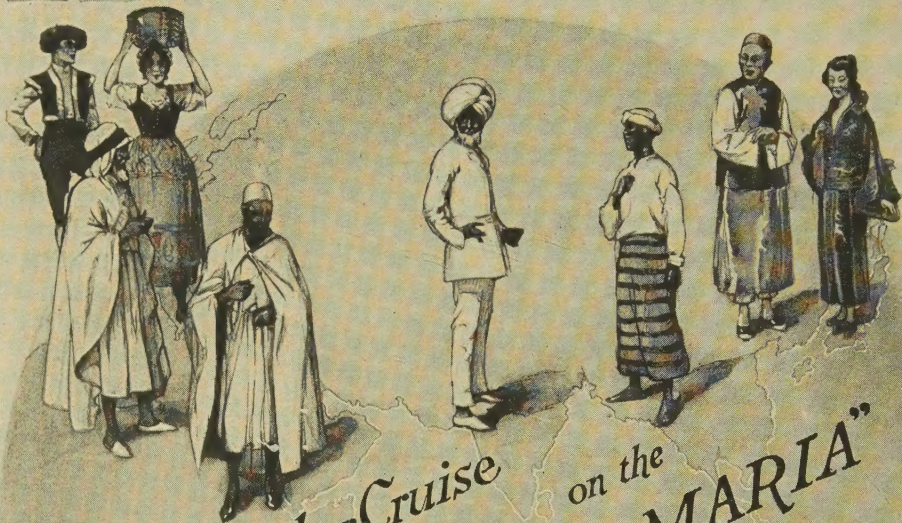


LUTHER BURBANK AT WORK

LUTHER BURBANK TELLS HIS OWN STORY
GRAVURE PICTURES OF LAFAYETTE NATIONAL PARK



Around *the* World



Another Cruise on the "SAMARIA"

1924
Jan. 26—June 3

Sailing Eastward in the Path of Spring

TO TRAVEL around the globe, into the heart of strange continents, where the call of the muezzin, the tinkle of temple bells, the songs of Geishas weave the spell of enchantment complete! A dream which you too, perhaps, have wished to see come true.

Within the compass of 130 days, you will come to know old civilizations, different people, odd customs; will visit Madeira, Gibraltar, historic and picturesque Mediterranean border-

lands including Egypt and the Nile, India, Burma, Ceylon, Java, China, Philippines, Japan — at the height of Cherry Blossom time—Hawaiian Islands, San Francisco, Panama, etc.

Cook's Travel Service—with its unique chain of permanent offices all along the route—is conducting the cruise; the ship chartered is the now famous SAMARIA, which proved herself so eminently suitable during our 1923 Golden Jubilee Cruise.

Leisure, Comfort and Luxury the Keynote
Cruise Limited to 400 Guests

Illustrated Literature on Request

THOS. COOK & SON

245 Broadway
Boston
Philadelphia

Chicago
San Francisco

NEW YORK

Los Angeles
Montreal

561 Fifth Ave.
Toronto
Vancouver

THE MENTOR, published monthly, on the first of the month, by The Crowell Publishing Company at Springfield, Ohio, U. S. A. Subscription, \$4.00 a year in the United States and Canada; foreign postage, 50 cents extra. Single copies, 35 cents. Subscribers are notified that change of address must reach us five weeks in advance of the next day of issue. August, 1923, Serial No. 246. Entered as second-class matter at the post office at Springfield, Ohio, under the act of March 3, 1879.

no renewal

Date Due

Antony and Cleopatra

When Antony—the finest looking man in Rome—the most powerful man of the Empire—commanded Cleopatra, Queen of Egypt, to appear before him to answer to a charge of treason she came, not as a criminal, but as a conqueror.

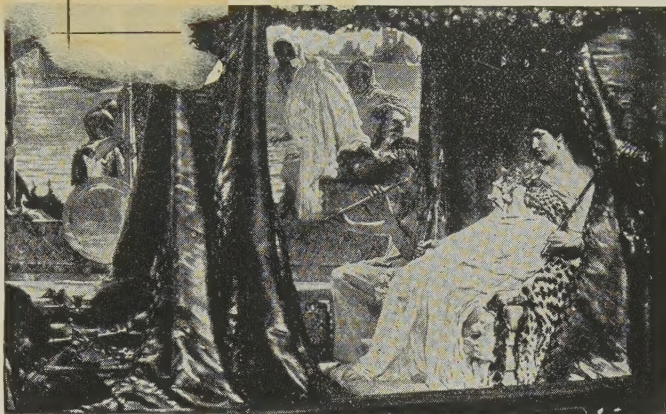
"The barge she sat in, like a burnish'd throne,
Burn'd on the water; the poop was beaten gold;
Purple the sails, and so perfumed that
The winds were love-sick with them . . .
As for her own person,
It beggar'd all description; shedid lie
In her pavilion. . . ."

History in the Terms of Men

Dr. Lord tells you Human Stories of Human Beings, the biography that is the true link between the past and the present. His great books supply just the knowledge of men and events that everyone needs. They fire the imagination and hold the reader spell-bound.

They give a man the broad contact that frees him from the limitations of his age, his country, his personal experience and gives him access to all ages, to all countries, to all experience.

They enable him to live a thousand lives in one. When we read the life story of a great man we unconsciously put ourselves in his place and we live his life in his day and generation.



From the hour of their meeting Antony was enslaved to this most beautiful, passionate and faithless woman of antiquity. She exhausted every art to please him. She played at dice with him, drank with him, hunted with him, flattering and reproving him by turn, always having some new device of pleasure to gratify his senses or stimulate his curiosity.

No man's imagination can create fiction as absorbing as the life-story of this woman. There are hundreds of others equally fascinating told by Dr. John Lord in Beacon Lights of History.

More Than 1,000,000 Volumes Sold

BUSY PEOPLE, who have time only for vital things, find neither burden of trivial detail nor omission of any matter of importance.

CLERGYMEN AND SPEAKERS use it as a veritable storehouse of character analysis, of keen comparison of men and events of all times, of satire, wit and oratory.

LAWYERS declare the chapter on "Moses" the ablest article on moral law obtainable, and that on Roman jurisprudence sheds light on the whole realm of Civil Law.

TEACHERS AND STUDENTS find it invaluable as a reference work and for supplementary reading. Each lecture closes with a condensed list of authorities for further research.

CLUB WOMEN find in it unlimited material, fascinating, alive and authentic, on which to build a club program or write a paper.

MOTHERS use it to fit themselves for full-fledged citizenship, and to keep in touch with their children's studies.

Send No Money

Seven attractive volumes in gray Art linen with "beacon light" design stamped on the sides—each vol. $6\frac{1}{2} \times 4\frac{1}{4} \times 1$ —small enough to go in your pocket, large enough to look well on your library table. Printed on white Bible paper—800 pages to the volume.

Examine them at your leisure. Only by seeing these books can you appreciate their value. We will send them to you on

5 Days' Free Approval

Then, if you do not want them, you may send the books back to us at our expense. If, after five days' examination, you keep the books, you may send us \$1.00 as first payment and \$2.00 a month for eight months.

A new edition will be ready for delivery soon after this announcement is made and thousands of people will want to grasp this opportunity of obtaining this renowned work which formerly sold for four times the price that you have to pay now.

Please sign the coupon and mail it to-day. If you wait until to-morrow you may forget it. The orders first received will be first filled, so do not delay.

CURRENT OPINION

48-50 W. 47th Street

New York City



CURRENT OPINION,
48-50 West 47th St., New York City.

M. 8-23.

Please reserve for me a 7-volume set of Lord's Beacon Lights of History, in gray Art linen. When they are ready you may send them for five days' free examination. If I keep them I will send you \$1.00 as first payment and \$2.00 a month for 8 months—\$17.00 in all.

Name

Address



Here is Burbank's white blackberry. It is one of hundreds of triumphs of the man who made Nature's secrets his secrets. Why not let him work with you in your garden this season? The free book tells how.

Know what Burbank knows

MANY an amateur gardener spends years learning what Burbank can tell him in five minutes.

Did you know, for example, that if you plant gladiolus—or almost any other lily bulbs—in the same place for three years, the third year's crop will be a failure on account of bacterial disease?

Do you know how to make the bees produce new flowers—how to turn white flowers blue, and so give a small garden the appearance of a large garden?

Burbank will tell you. Suppose the Plant Wizard could walk with you through your garden some evening. What a wonderful chance you would have to talk things over with him!

But Luther Burbank cannot, of course, visit your garden in person; he has decided to put down on paper his whole 50 years' experience for everybody's benefit. So that you may know him better, we have selected some of the most interesting things from the big volumes and bound them into a little book called

P. F. COLLIER & SON COMPANY
416 West 13th Street, New York City

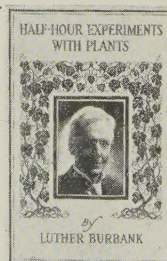
Send me by return mail, free of charge, "Half-Hour Experiments with Plants"; and at the same time tell me how I can secure, if I wish, the complete eight-volume edition of Burbank's works on small monthly payments.

Mr.
Mrs.

Name *Miss* *Please write plainly.*

Address

2122-BKJ L



"Half-Hour Experiments with Plants"

This booklet contains useful information from the eight splendid volumes. It is published free for every American gardener who wants to grow better fruits, vegetables and flowers. When you follow its suggestions, you have Burbank working with you!

Send for the little book today. This convenient coupon saves you the trouble of writing a letter.



Big Summer Offer of World-Famous Nature Books

Send for FREE BOOKLET—
and learn terms to associates

Yours for the asking—telling about “The Wonder Books of Nature.” With its full-page plates in natural colors, specimen pages of actual text, and other information of great value, it is offered to you as a delightful foretaste of

The New Nature Library

“The Most Complete Set of Nature Books of the Century”

FOR years we have been building, planning, looking ahead to the day when we could announce this stupendous publishing event. We have stopped at nothing to make the New Nature Library the most sumptuous, most authoritative, most wonderful work on this subject that has ever been produced.

The most eminent naturalists—as, John Burroughs, Neltje Blanchan, W. T. Holland, to mention a few—were selected as contributors. Endless search for the finest illustrations was patiently carried on (happily with the assistance of the Audubon Society, and the eminent nature photographer, A. Radcliff Dugmore). Of the thousands chosen, many are reproduced as full-page plates, representing the last word in modern color-photography. Even the binding, paper, and type were subjected to innumerable experiments and tests to insure a beauty, serviceability, and worth in the finished product of which both ourselves and future owners might be justifiably proud.

Edition De Luxe 10 VOLUMES

Each 10 in. high by 7½ in. wide by 1½ in. thick—almost 4,000 pages—printed from big, clear, easily readable type on an excellent grade of paper—beautifully bound in dark green, mercerized cloth, with gilt tops stamped in gold. Thousands of illustrations, including 700 magnificent half-tone plates, many of which are reproduced in full color. A rare tribute to Nature in printing, binding, and literary art.



“To add to the resources of life . . . to add to those things that keep us fresh and sane and young—a human interest in Nature . . . We have only to look into Nature by the use of such books as this Nature Library contains to add vastly to our pleasure in and our knowledge of the world that lies about us,” said John Burroughs.

No previous single work or library of this character

has attempted to present the drama of Nature, the romance of the wild life about us, in such an interesting, non-technical, delightfully readable way. The story of the birds, flowers, animals, fishes, insects, trees—in fact, of the whole teeming life of the open—is made as alluring, as fascinating, as human romance.

The Wonders of Modern Color Photography

In the reproduction of beautiful flowers, the brilliant colors of birds, the gay butterflies, the bright spring foliage—there is nothing more pleasurable or valuable than modern color photography. Since the volumes of THE NEW NATURE LIBRARY are ample in size they show with marvelous effectiveness the many full-page color illustrations.

No other set of books on Nature Subjects is so complete, so generally consulted, and quoted. In THE NEW NATURE LIBRARY you have books that stand alone in authority and style of presentation; in fact, it is the most complete and beautiful encyclopedia of Nature ever published.

Don't Delay

The booklet which we offer to send you will tell you all about this new set. It will show you samples of the color photography; and it will tell you why THE NEW NATURE LIBRARY is within the reach of everyone more than its predecessor ever could be. The demand for this Nature Library Color Booklet is great, and our supply is disappearing fast, so send for your copy today—it will be yours for the asking. Doubleday, Page & Co., Dept. 568, Garden City, New York.

Doubleday,
Page & Co.
Dept. 568
Garden City, N. Y.

Please send me free your beautiful color booklet describing this New Nature Library. Also complete information, including terms. This request does not obligate me in any way.

Name

Address

"Why Mrs. Blakely —How Do You Do!"

He had met her only once before. Some one had presented him at a reception both had attended. He had conversed with her a little, danced with her once. And now, two weeks later, he sees her approaching with a young lady who he surmises is her daughter.

"Why, Mrs. Blakely, how do you do!" he exclaims, rushing forward impulsively. But Mrs. Blakely, accustomed to the highest degree of courtesy at all times, returns his greeting coldly.

And nodding briefly, she passes on—leaving the young man angry with her, but angrier with himself for blundering at the very moment he wanted most to create a favorable impression.



DO you know what to say to a woman when meeting her for the first time after an introduction? Do you know what to say to a woman when leaving her after an introduction? Would you say "Good-bye, I am very glad to have met you"? Or, if she said that to you, how would you answer?

It is just such little unexpected situations like these that take us off our guard and expose us to sudden embarrassments. None of us like to do the wrong thing, the incorrect thing. It condemns us as ill-bred. It makes us ill at ease when we should be well poised. It makes us self-conscious and uncomfortable when we should be calm, self-possessed, confident of ourselves.

The knowledge of what to do and say on all occasions is the greatest personal asset any man or woman can have. It protects against the humiliation of conspicuous blunders. It acts as an armor against the rudeness of others. It gives an ease of

manner, a certain calm dignity and self-possession that people recognize and respect.

How People Judge Us By What We Do and Say



No one can conceal poor table manners. To use the knife and fork incorrectly, to do the wrong thing at table, is to betray instantly one's lack of breeding.



When you are introduced are you uncomfortable—ill at ease? Or do you create at once a friendly understanding? Strangers always judge us by what we do and say upon being introduced.



We encounter many problems of conduct when traveling. One must know what clothes to include in one's wardrobe, what to wear on the train or steamer, when to tip and what amount to tip. Are you sure, or must you guess?

Do You Ever Feel That You Don't "Belong"?

Perhaps you have been to a party lately, or a dinner, or a reception of some kind. Were you entirely at ease, sure of yourself, confident that you would not do or say anything that others would recognize as ill-bred?

Or were you self-conscious, afraid of doing or saying the wrong thing, constantly on the alert—never wholly comfortable for a minute?

Many people feel "alone" in a crowd, out of place. They do not know how to make strangers like them—how to create a good first impression. When they are introduced they do not know how to start conversation flowing smoothly and naturally. At the dinner table they feel constrained, embarrassed. Somehow they always feel that they don't "belong."

Little Blunders That Take Us Off Our Guard

There are so many problems of conduct constantly arising. How should asparagus be eaten? How should the finger-bowl be used, the napkin, the fork and knife? Whose name should be mentioned first when making an introduction? How should invitations be worded? How should the home be decorated for a wedding? What clothes should be taken on a trip to the South?

In public, at the theatre, at the dance, on the train—wherever we go and with whomever we happen to be, we encounter problems that make it necessary for us to hold ourselves well in hand, to be prepared, to know *exactly what to do and say*.

Let the Book of Etiquette Be Your Social Guide

For your own happiness, for your own peace of mind and your own ease, it is important that you know definitely the accepted rules of conduct in all public places.

It is not expensive dress that counts most in social circles—but correct manner, knowledge of social form. Nor is it particularly clever speech that wins the largest audiences. If one knows the little secrets of *entertaining conversation*, if one is able to say always the right thing at the right time, one cannot help being a pleasing and ever-welcome guest.

The Book of Etiquette, social secretary to thousands of men and women, makes it possible for every one to do, say, write and wear always that which is absolutely cor-

rect and in good form—gives to every one a new ease and poise of manner, a new self-confidence and assurance. It smooths away the little crudities—does amazing things in the matter of *self-cultivation*.

SEND NO MONEY

Take advantage of the important special-edition, low-price offer made elsewhere on this page. Send today for your set of the famous Book of Etiquette. These two valuable volumes will protect you from embarrassments, give you new ease and poise of manner, tell you exactly what to do, say, write and wear on every occasion.

No money is necessary. Just clip and mail the coupon. The complete two-volume set of the Book of Etiquette will be sent to you at once. Give the postman only \$1.98 (plus few cents postage) on arrival—instead of \$3.50 which is the regular publishing price. If you are not delighted with these books you may return them any time within 5 days and your money will be refunded at once, without question.

This coupon is worth money to you. It will bring you the famous Book of Etiquette at almost *half* the regular price. Use it—today!

Nelson Doubleday, Inc., Dept. 568, Garden City, New York.

Nelson Doubleday, Inc., Dept. 568
Garden City, New York

I am glad to know of the special low-price edition of the Book of Etiquette. You may send me these two volumes without any money in advance. When they arrive I will give the postman only \$1.98 (plus few cents postage) in full payment—instead of the regular price of \$3.50. I am to have the privilege of returning the Book of Etiquette any time within 5 days if I am not delighted with it.

Name.....

Address.....

☐ Check this square if you want these books with the beautiful full-leather binding at \$2.98 with same return privilege.
Orders from outside the U. S. are payable \$2.35 cash with order.

Special Bargain!

The Famous Book of Etiquette

Nearly Half a Million Sold at \$3.50

NOW \$1.98
ONLY For a Very Limited Time

At this time of the year there is always a lull in the publishing business. To keep the presses running and the pressmen from being idle, Nelson Doubleday, Inc., makes the amazing offer to send you the complete, authentic, original BOOK OF ETIQUETTE at almost *half* the usual publisher's price!

You have always wanted to own the two remarkable books that give poise, ease, dignity, self-confidence. Almost 500,000 people have purchased them at the regular price of \$3.50. If you act **NOW** you can receive the same two authoritative and fascinating volumes for only \$1.98.

SEND NO MONEY

Here's your chance—take it! Let us send you the famous two-volume Book of Etiquette at the **special offer price**.

No money is necessary. Just clip and mail the coupon below to us at once. We will send you the complete, two-volume set and when it arrives you have the privilege of giving the postman only \$1.98 (plus a few cents postage) for the regular \$3.50 set!

Surely you are not going to let this offer slip by. Clip and mail the coupon **NOW** while you are thinking about it.

NELSON DOUBLEDAY, Inc.
Dept. 568 Garden City, N. Y.

Get It FREE—*Character Reading—One Lesson of the*

“LIFIL”

Course in Practical Psychology

LESSON Ten on Character Reading, just one of the many subjects covered by the “LIFIL” Course in Practical Psychology, will put your feet on the ground on this question of character analysis. It gives you a sane, scientific and usable method. It considers Character Reading as one part of the great fundamental desires and needs of the human race—a better understanding and development of Personality. It points out the unescapable fact that your ability to judge other people’s characters must depend on how well you can use your own powers of observation, perception, and creative thought.

The “LIFIL” Course in Practical Psychology—of which Lesson Ten is here offered to you absolutely free—gives new light on these points and many others of vital personal interest to you.

“LIFIL” Training is More Important to You Than Knowledge

It is a commonly accepted notion that, to earn a living, it is most important to put in one’s head all the special or technical information required to become a lawyer, or doctor, or engineer, or merchant, or what not. But read what one of America’s most noted financial and economic authorities thinks about this:

“During the past few years I have been analyzing the characteristics and assets of America’s great captains of industry. In beginning this investigation I thought that the important things of business were capital, technical training, physical endurance and those other material forces which we so much seek. Careful study, however, convinces me that these *tangible factors are of little value*. The real assets possessed by our captains of industry are the so-called intangible assets, among which are thoughtfulness, kindness, sympathy, hopefulness.”

Thus it is that the men and women who perceive the *simplicity* of the great fundamentals become the leaders, and hire others to do for them the things which require merely technical knowledge or ability.

The “LIFIL” Course in Practical Psychology Teaches Scientific Personality Development

If your mind is still open to new thoughts and ideas, why not let us submit the proof to you? This so-called “new idea” has stood the test of 25 years of searching study, experiment and application. Its final complete expression in the “LIFIL” Course (pronounced Life-Phil) contains *workable, livable* principles and *exact, definite* methods, for developing every power and faculty of the five great parts of your Personality—Body, Mind, Heart, Will, Faith.

It is, in truth, a crystal-clear Life Philosophy—Life-Phil—Lifil—filling life with more Life, for Life. Regardless of your education, *if you are able to read the magazines*, you can grasp and apply its teachings. The youngest “LIFIL” student is a girl of 15—the oldest a man of 82.

The Five Great Parts of Personality

Here is a brief taste of what the “LIFIL” Course will bring you: **BODY.** Not simply for health, but for vigorous health. Condensed vital scientific exercises for body balance and nerve health. You will learn to love the “3-minute” exercise, and laugh while you do it, and every laugh draws a nail from your coffin.

MIND. Do you know the two strong forms of reasoning, and the three weak forms? Have you Constructive Imagination—the source of all inventions and discoveries? “LIFIL” shows how to develop and use it in your business and social life. “LIFIL” gives a unique and distinctive training in the laws of concentration, creative thought and memory.

HEART. Any brief description of this part of “LIFIL” would only convey an imperfect and false idea of it. The two sections on Sentimental Love (sweetheart, sex, marriage) and on Civic Love are alone priceless to every thinking individual. The Nine Major Sources of Feeling, which sweep every man on to victory or defeat, are given you, and how to control them for more friends, clients, customers and success.

WILL. “LIFIL” does not simply talk about determination, persistence, push, focalization, conservation of energy, courage, self-reliance—but gives the actual exercises for realizing them in your life. Learn the new science of Mental Metabolism for success control—the very point where the millions fail. You will marvel that it has not been thought of before, taught, and used in education.

FAITH. Confidence and faith move everything worth while. “LIFIL” reveals, in simple language, an infallible source of power overlooked by the masses, but which will prove a revelation for practical every-day use. You cannot be successful in any human relation without faith.

The “LIFIL” Scientific Method of Individual Instruction

By doing we learn *life*. By reading we only learn *facts* about it. This course is a *doing* course. You really get life in all its phases, the Balanced Personality, the Fundamental Education, directly applicable to any man or woman in any walk of life—a fortune to the young, a new inspiration to the old.

Individual correction and guidance is given with every study course. Your relation with the instructor is confidential and you will appreciate his sympathy and eager interest in your personal progress. You will begin to live “LIFIL” with the first lesson. Put “LIFIL” in your life—and watch results. The enthusiasm of “LIFIL” members is unbounded.

Send To-day for Lesson Ten

Send the Free Lesson Coupon below for the regular Lesson Ten of the “LIFIL” Course—a 26-page bound book, illustrated and easy to read—brimful of truth. One of the most important things for your progress is to be able to “size up” other people quickly and accurately. Lesson Ten gives you definite principles that you can at once put to work for yourself. Many “LIFIL” members have written that it alone is worth the price of the entire course.

With Lesson Ten we will send a complete description of the “LIFIL” Course, and also tell you how you can obtain the “LIFIL” Test for a Balanced Personality and a confidential psychological analysis, free of charge. Take advantage of this offer while it is open—NOW! Sign and mail the coupon, kindly stating your age and occupation.

FREE LESSON COUPON

FEDERAL INSTITUTE OF PSYCHOLOGY,
17 Federal Schools Bldg., Minneapolis, Minn.

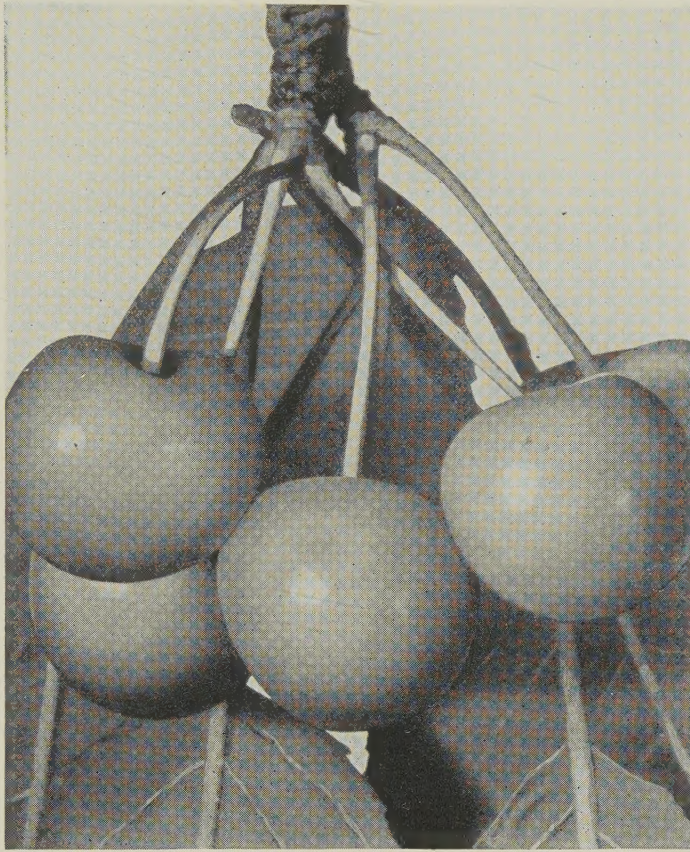
Gentlemen—Please send me without charge Lesson Ten of the “LIFIL” Course and explain your offer on the “LIFIL” Balanced Personality Test.

Age..... Occupation.....

Name.....
(Write your address plainly in margin.)

MY LIFE AND WORK WITH FRUITS AND FLOWERS

BY LUTHER BURBANK



LATE-BEARING CHERRIES

Bred by Burbank to improve the fruit and prolong the cherry season. The photograph shows them actual size

ILLINOIS STATE LIBRARY
GENERAL LIBRARY DIVISION
SPRINGFIELD, ILLINOIS.

THE story of the man who has made Nature improve and increase her products; who has wedded fruit to fruit and flower to flower, and brought from their union an offspring larger and finer than their forebears—the personal story of Nature's Miracle Man.



LUTHER BURBANK IN HIS GARDEN

Where, surrounded by plants and flowers, he has worked on an average of ten hours a day for the last forty years

The MENTORVol. 11
No. 7SERIAL
NO. 246

AUGUST, 1923

MY LIFE
AND WORK*With Fruits and Flowers*

BY LUTHER BURBANK



Wide World Photo

CALIFORNIA HONORS BURBANK

Commemorating Burbank's service to the world, this group is to be erected in the new Burbank Memorial Park, Santa Rosa

The story of how I worked out the great underlying principle of plant-breeding is, perhaps, best told in its natural sequence. It begins on my father's farm, three miles north of Lancaster, Massachusetts, where I was born, March 7, 1849. My father was a farmer and a manufacturer. From my mother I inherited a passionate love of flowers, which manifested itself early in life. Behind both of my parents was a line of healthy, industrious, happy, prosperous, respected, self-supporting citizens to whom, I believe, I owe the ability to work ten hours a day, which I have averaged for each calendar day for more than sixty years. I had the usual New England childhood. After leaving the district school, I attended the Lancaster Academy. Two years' wood-turning and pattern-making at a Worcester factory, and supplementary lessons in drawing from Professor George C. Gladwyn, long connected with the Massachusetts Institute of Technology, quickened my observation and gave me facility in making accurate measurements, which later proved valuable in my work with plants. I had a knack for contriving things mechanical, and might have continued as a mechanic, but the sawdust of the factory impaired my health, and it was decided that I should become a physician instead. I had completed a year's study in medicine when my father died, an event which was responsible for my undertaking what proved to be my life work. I was twenty-one years old before I entered specifically on the work, although, of course, I had been trained in all the tasks of the farmer, gardener, and fruit grower on my father's farm. Yet it is not certain that I should have been led to put this knowledge to practical use at this time had it not been for the stimulation and fresh enthusiasm that came from reading Darwin's "Animals and Plants Under Domestication." It aroused my imagination,

gave me an insight into the world of plant life, and developed within me an insistent desire to go into the field and find the answer to the problems that the book only suggested. In particular it showed me the plants of the field in a new light. Meantime I had to make a living, so I purchased a seventeen-acre tract of land in the village of Lunenburg, and began to raise garden vegetables and seeds for the market.

While engaged in this work, I made some experiments with corn and beans. I was able to produce an earlier and better corn, and some interesting cross-bred beans. Every plant in the garden and every shrub and tree and herb in field or woods was examined with new interest, always with first thought as to its tendency to variation. Where I had casually noticed before that individual flowers of a species differed in details as to form or color or productivity, accurate notes were now made of such variations, and the query was raised as to whether they gave suggestion of the possibility of developing new races under cultivation. It was at this point that the first conspicuous success in the development of a new race of plants was achieved—the Burbank potato. The story of this achievement sheds light on one of the important aspects of plant-breeding, and has attracted world-wide attention.



“GO WEST, YOUNG MAN!”

Burbank at the age of twenty-seven, when he heeded Greeley's advice, sold his farm in Massachusetts, and with ten Burbank potatoes started for California

Away back in the history of the potato, on the bleak Chilean mountainsides, where it had to depend almost wholly upon its seeds instead of tubers for reproduction, every healthy potato plant bore a great number of seed balls, and this is the case, even in these times, in the high Andean region. But years of cultivation have removed from the potato the necessity of bearing seeds for the preservation of the race. The potato plant now has little use for the seed upon which its ancestors depended. The average potato grower, knowing that next year's crop depends only on this year's tubers—and being anxious, alas, to keep his crop at a fixed standard rather than to improve it,—might see the occasional seed ball without knowing its meaning or realizing its possibilities.

I had been raising potato seedlings for amusement at Lancaster, but all of them had so generally re-

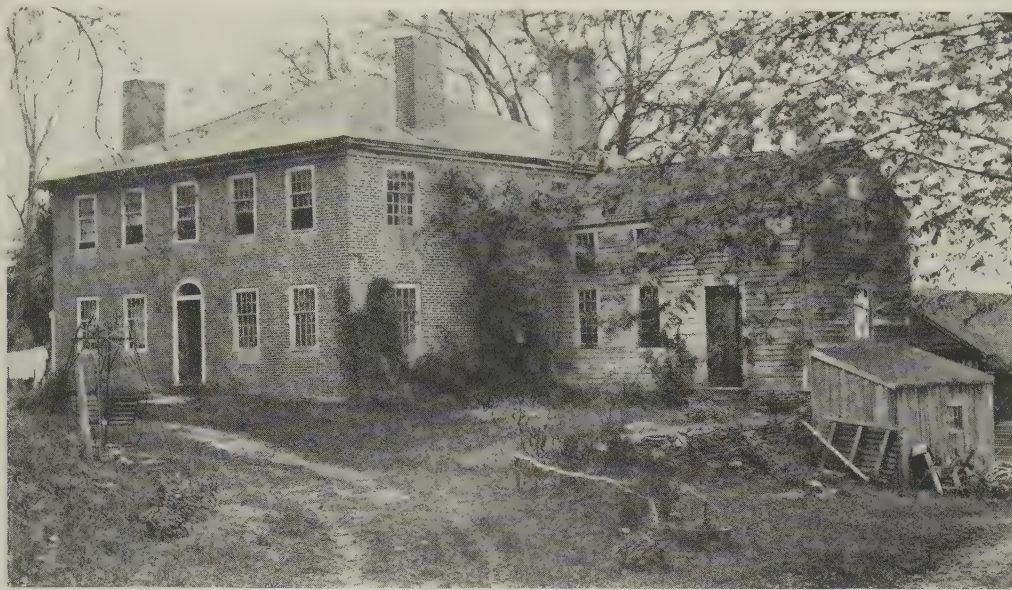


Photo Brown Bros.

THE NEW ENGLAND HOMESTEAD ❖ ❖

Where Luther Burbank was born on March 7, 1849, and where he spent the early years of his life. Here his mother instilled the love for flowers which was one of the most potent influences of his life

sembled the parent plants that I had given up the effort to produce anything of special value from any of the common varieties.

No one, up to the present time, so far as I know, has ever seen a seed ball on an Early Rose potato, except myself, and for years I had a standing offer of five dollars a fruit for anyone who would furnish me another from the thousands of acres which were raised of this variety at that time.

This seed ball attracted my attention from knowing that the Early Rose did not bear seeds, and it was watched patiently from the time it first formed until it was nearly ripe.

When one day I went to examine it, it had disappeared, and every effort to find it for a time failed. But at last it was discovered a short distance from the plant, where perhaps some passing animal had brushed it from the vine.

In May, 1872, I held in my hand one seed, ten of which were not as large as an ordinary pin head. From this tiny seed the "Burbank" potato came. More than six hundred million bushels of this potato have been raised during the last forty-nine years—enough to make up a solid train of potatoes to reach 14,500 miles, or more than halfway around the world.

From the seed ball were produced twenty-three new potato plants. Each of these plants yielded its own variations, its own interpretation of long-forgotten heredity and numerous natural crossings. One, a beautiful, long, red potato, decayed almost as soon as dug; another was red-skinned with white eyes; another white with red eyes; two were white, and several had eyes so deep that they were unfit for use. All varied widely. These twenty-three



BURBANK'S FIRST CALIFORNIA HOME

Which he rented, together with the few acres surrounding it, soon after arriving at Santa Rosa. Burbank worked at carpentry during the days and spent the long evenings gardening. The cottage is now used as a seed house on his farm

variations, in fact, may have represented as many different stages in the history of the potato family; and, having no present-day environment to hold them in balance, all were more or less unlike any potato which had ever been cultivated. Among the number, though, was one variety better than the rest—and better than any potato which had ever been seen.

This variety was named

the "Burbank" by J. J. H. Gregory, a seedsman of eastern Massachusetts, to whom it was sold for \$150. By planting this new potato in the customary manner it was "fixed" as a new variety. To-day, when more pounds of potatoes are grown than any other food crop, the increase made in a single year's crop—the increase gained without any corresponding increase in capital invested or cost of production—amounts to an astounding sum in the millions.

I had not proceeded far in my experiments before it was clear that such further experiments as were contemplated could not be carried out to best advantage in the climate of New England. My thoughts turned to California, where two of my half brothers had gone many years before. What was reported of the climate of the Pacific coast region suggested this as the location where my experiments might best be carried out.

Within sixty days of the time when the definite decision to go to California was reached, I had sold my personal property and closed out my business in Lunenburg. With a little capital and ten Burbank potatoes, which Mr. Gregory had allowed me to retain, I set out on the then nine-day journey to the Pacific coast. Letters of the period are filled with enthusiasm over the marvels of the new land. "Santa Rosa is situated," I wrote to my mother, "in a marvelously fertile valley containing one hundred square miles. The climate is perfect, the air is so sweet that it is a pleasure to drink it in; the sunshine is pure and soft."

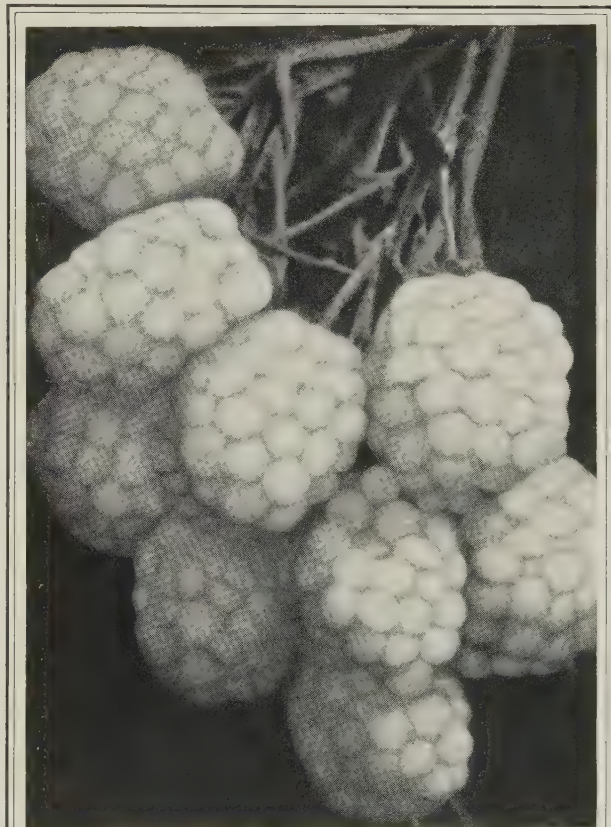
After a time I was in position to hire a few acres, and then, although working at carpentry during the day, I was able to devote the long summer evenings to preparation of a small nursery. The ten Burbank potatoes were planted on my brother's place; and the entire product of the first season was

MY LIFE AND WORK

saved and planted, so that by the end of the second season the stock of potatoes was large enough to offer for sale. The sale of the Burbank potato helped out a little, but did not at first bring a large return. The people were accustomed to a red potato; a white one, even though larger, smoother, and more productive, and of better quality, did not seem at first a tangible substitute. But in course of time the Burbank potato made its way and became the leading potato of the Pacific coast.

I began my nursery business at Santa Rosa by raising such fruits and vegetables as gave promise of being immediately acceptable to the people of the vicinity. At that time the possibility of California as a fruit center was for the most part vaguely realized, and it was first necessary to educate Californians themselves to a recognition of the fact that in the soil and climate of their state were potentialities of greater wealth than had ever been stored in the now almost depleted gold mines. This and other conditions explain the difficulties I had in establishing myself as a nurseryman in Santa Rosa in 1877. The total sales of my first year amounted to \$15.20. The next year the return was \$84. In 1881 it was over a thousand dollars, and within ten years the quality of the trees and the reliability of the stock in general of the Burbank Nursery had become so widely known that I was selling more than \$16,000 worth of stock a year.

In the course of time more land was needed, and the four-acre place in the heart of Santa Rosa was purchased. This was in future to be my home and the seat of many of my most important experiments. This place was then a neglected, run-down plot which had been on the market for many years. The land was about as poor as could be found anywhere. Many attempts had been made to cultivate it, but a crop had not been grown on it for a long time, if ever. Such a plot did not seem to offer great in-



WHITE BLACKBERRIES

One of the many seemingly impossible achievements of the Plant Wizard, attained after long and tedious experiments. This delicious product, "black" in variety, is pure white in color. The season of its ripening has also been controlled by its creator

MY LIFE AND WORK

ducements for a nurseryman, but I had in mind a plan to transform it. This was done by properly draining the land and conditioning it with sand and fertilizer.

By 1884 I was thoroughly established with a nursery business that gave me a sure income of ten thousand dollars or more a year, and nothing more was required than to continue along lines of this established work to insure a life of relative ease and financial prosperity. But nothing was further from my thoughts than the permanent following of the routine business of the nurseryman. At no stage of the work in California had I given up the expectation of devoting the best years of my life to plant experimentation and the development of new races of useful fruits and vegetables, and of beautiful flowers. And now the time seemed to have arrived when the long-deferred project could be put into execution.

In 1884 I received my first consignment of Japanese fruits; and the next year I was able to buy the Gold Ridge farm at Sebastopol, seven miles from Santa Rosa, in a region that was better adapted to certain of my projected experiments. This eighteen-acre place was devoted solely to experimental purposes, and its purchase may be said to mark the commencement of my life's work, although I kept the nursery business for several years more.

The nursery at Santa Rosa was well stocked for my purposes. The 1887 catalogue listed orchard fruits in great variety; small fruits of the choicest types; nuts of several species; garden vegetables; a long list of deciduous orna-

mental trees and shrubs, and an even longer list of evergreens; vines and trailing shrubs in interesting variety; and elaborate series of roses, hedge plants, bulbous plants, and bedding plants.

The year following, grafts of twelve varieties of New Zealand apples were imported. And from this time forward I constantly received seeds, bulbs, and scions of rare and interesting plants from all parts of the world. Explorers, missionaries, teachers, travelers, botanists, sailors, and others by thousands have placed at my disposal seeds, plants, and bulbs with never a thought of personal reward. The native Indians of North and South America have been pressed into this service; they of all others know where the best wild plants and flowers are to be found.

My first efforts were directed toward



Photo Brown Bros.

TWO OF THE WORLD'S GREATEST PLANT BREEDERS

Hugo de Vries, world-famous for his experiments in plant evolution, twice journeyed from his home in Holland to visit the Santa Rosa nurseries. The eminent botanist declared Burbank to be one of the geniuses of the age, and a benefactor of all mankind

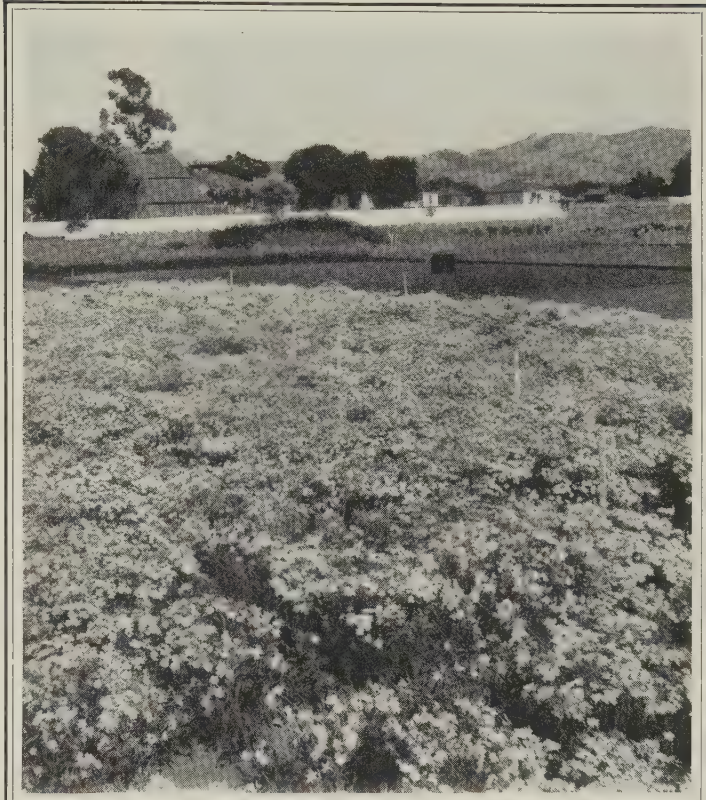
improvement of fruits and flowers, particularly the orchard fruits that were then being planted in California. But before going farther in my story it is necessary that we know something more of the underlying principle of plant-breeding; how it is possible to combine a plum and an apricot; how a walnut is made to thin its shell, a cactus to shed its spines.

Every plant, animal, and planet occupies its place in the order of nature by the action of two forces—inherent constitutional life force with all its acquired habits, the sum of which is heredity; and the numerous complicated external forces, or environment. To guide the interaction of these two forces, both of which are only different expressions of the one eternal force, is the sole object of the breeder of plants or animals.

When we look about us on the plants inhabiting the earth with ourselves, and watch a species day by day, or year by year, we are unable to see any change in some of them. During a lifetime, and in some cases, perhaps, the full breadth of human history, no remarkable change seems to have occurred. And yet there are to-day few, if any, plant species that have not undergone great, and to a certain extent constant, change—the invisible change often appearing abruptly without apparent cause.

The life forces of the plant, in endeavoring to harmonize and adapt the action of its acquired tendencies to its surroundings, may, through many generations, slowly adapt itself to the necessities of existence, yet these same accrued forces may also produce sudden and, to one not acquainted with its past history, most surprising and unaccountable changes of character.

Natural and artificial crossing and hybridization are without doubt



AN EVERLASTING FLOWER—THE AUSTRALIAN
STAR PLANT

Seeds of this flower were received from a West Australian collector. Originally it was small and white, by selection it was made large and pink. An order for ten million sprays of this flower from a Parisian milliner was refused by Mr. Burbank because he was too busy on other matters to undertake the contract



THE NEW AMARYLLIS AND ITS
PARENTS

among the principal remote causes of nearly all otherwise perplexing or unaccountable sports and strange modifications, and also of many now well-established species. Variations, without immediate antecedent crossing, occur always and everywhere from a combination of past crossings and environments. This is because potential adaptations often exist through generations without becoming actual, and when we fully grasp these facts there is nothing so very mysterious in the sudden appearance of curious varieties. Still further intelligent crossing produces more immediate results, and of great and far-reaching value, not to the plant in its unremitting struggle with the ordinary natural forces, but to man, by conserving and guiding

its life forces to supply him with food, clothing, and innumerable other luxuries and necessities.

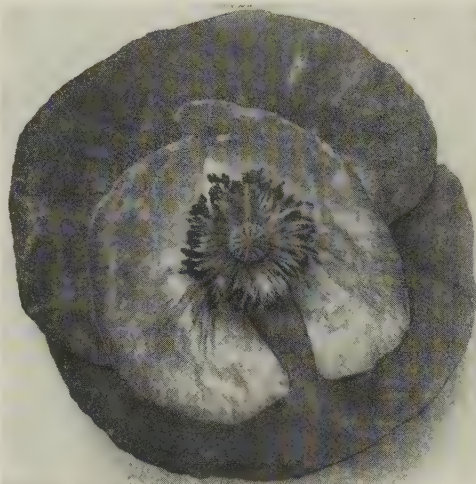
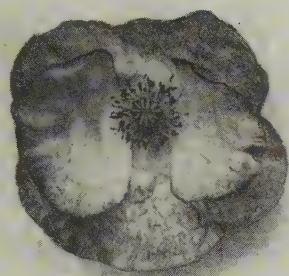
The evolution and variation of plants are simply means which they employ as species, in adjusting themselves to external conditions. Each plant must adapt itself to its own particular environment, with as little demand upon its forces as possible, and still keep up in the race for betterment.

Plant-breeding is the *intelligent application of the forces of the human mind in guiding the inherent life forces into useful directions by crossing to make variations and new combinations of these forces*, and sometimes by radically changing environments, both of which produce somewhat similar results.

No plants better illustrate the influence of environment than those of the desert; they are all either bitter, poisonous, or spiny. The cactus is a plant which, although there may not be a drop



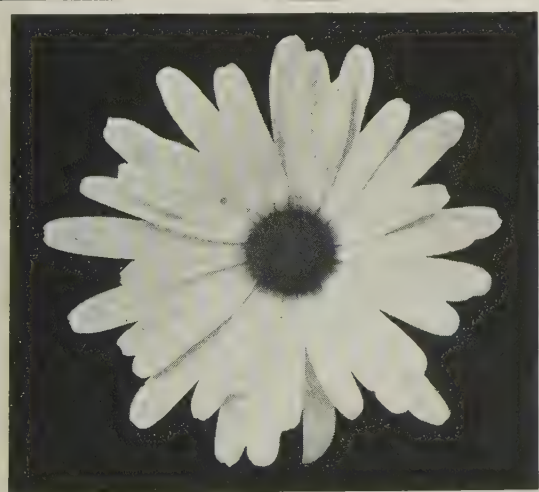
THE ORIGINAL ENGLISH FIELD DAISY



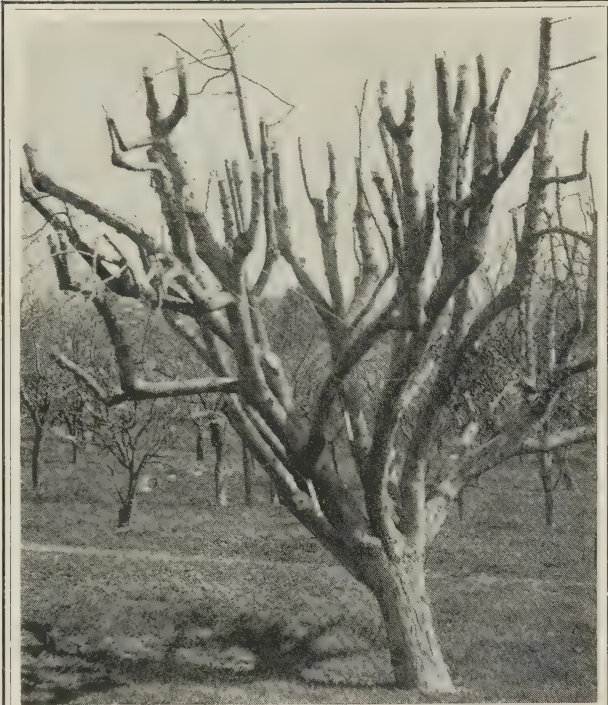
WHAT BURBANK DID TO THE POPPY

of rain for a year, two years, or even ten, still contrives to get enough moisture out of the deep soil and out of the air to build up a structure which by weight is ninety-two per cent water—a plant which contrives to absorb from the scorching desert, and protect from the withering sun, enough moisture to make it nearly as nutritious as beefsteak, vegetables, or pasture grass. And here it is, ruined for every useful purpose to man by the spiny armor which places its store of nutriment and moisture beyond reach. What other reasons could there be for those spines than that they are nature's provisions for self-defense? Here is the sagebrush, with a bitterness as irritant almost as the sting of a bee, the euphorbia, poisonous as a snake, for self-protection

from an enemy which seeks to destroy. The apple, cherry, peach, and plum trees in our orchards bear luscious fruit in abundance; the roses, geraniums, and lilies surrounding our dwellings seem to compete to see which can give us the greatest delight. But is it not because we have selected, fostered, nurtured, and cared for them? Is it not because we have made it easy for them to live and thrive? The bitterness, poison, and spines of the desert plants have been acquired. They have not been



THE DAISY UNDER BURBANK'S MAGIC TOUCH



HOW A TREE IS GRAFTED

The crown or bark graft can only be used late in the season, when the bark slips. For this graft the stock is sawed off and incision made to include the bark only. The sprout—cut only on one side—is inserted and a waxed bandage is applied. As many as five hundred varieties have been grafted and grown on one tree at Santa Rosa

cherished and protected, and when the region in which they lived became arid, when the other plants succumbed to the aridity, and animals depended more and more upon the surviving plants for food, these plants were forced to adopt defensive measures to exist.

Now, it is notable that cactus plants from protected localities, and those of the less edible variety, give evidence by the fewness of their spines that their family struggle has been less intense than the struggle of the cactus that found itself in the desert.

Taking advantage of the cactus' adaptability, by planting millions of seeds, and selecting and crossing those plants with a tendency

toward spinelessness and the other qualities I sought, in sixteen years I was able to produce a spineless cactus; and this, in short, is the secret of creating and developing new plant forms.

Hundreds of cases of plant adaptability could be cited: the group of pines growing in the geyser section of California, which only open their cones and scatter their seeds when a fire sweeps them, having been forced to this course by volcanic fires of the past; the pitcher plant of the Sierras that catches frogs, mice, and other small animals which it swallows and digests to supplement its ordinary source of nourishment; the arum lily, which emits an offensive smell to attract the carrion flies which carry its pollen from flower to flower; the devil's claw, which hooks its prongs into the leg of a passing animal in order that its seeds may be distributed.

By discovering the stored-up heredities of plants, selecting those suited to his purpose, and changing the environment to encourage the development of the traits he desires in his finished product, the plant breeder produces new plants. The actual crossing is accomplished by hand-pollenization, grafting, or budding. Thus a process that would take nature centuries of evolution to accomplish may be done in a comparatively few years by man.

Let us take as a specimen of this work the methods employed in the pro-

MY LIFE AND WORK

duction of a new cherry. Let us say that we wish to produce a large, sweet cherry which will ripen early and bear long, taking into account that appearance is also a factor. The first step would be to gather in our elements, to pick out a large, beautiful cherry which, after the manner of many large, beautiful fruits, may be more or less insipid in taste; then to select another cherry, size and appearance inconsequential, which has the delightful flavor we desire. Let us take not one of each of these types, but a number of them, and then, when they have bloomed, let us, by hand, cross them back and forth, making in all, we will say, five hundred crosses, each tied with string of a certain color for the purpose of identification. The petals of the blossoms which we have crossed will fall away; long stems bearing green cherries will begin to take their place; and finally the twigs we have marked with strings will reward us with their ripened fruit. The meat of the five hundred cherries which we have crossed will taste the same, and be the same, as though we had let the bees attend to pollenization; the cherries that result will not be different in flavor or appearance from the other cherries of the tree. But inside the stony seed of each of those cherries we shall find an indelible living record of what has been done. We plant our five hundred cherry seeds and keep them in a shallow box until they have sprouted, and then transplant them till they attain a six- or eight-inch growth.

So far, let us see how we have shortened nature's processes. In the first



TURNING STONES INTO LOAVES

After fifteen years' effort, Burbank transformed the cactus from a useless desert plant into a spineless food for cattle. In connection with this part of his work, Burbank writes: "For five years the cactus-blooming season was a period of torment to me. Time and again I wished I had never touched the cactus to attempt to remove its spines. Looking back, I feel that I would not have courage to renew the experiments. The little spicules would find lodgment in my skin, and shaving was the only way I could rid myself of them"



place we have brought together a large, insipid cherry and a homely, small, sweet one, brought them from points, perhaps, two thousand miles apart. In the natural course, those two cherries would have spread; they would, eventually, have come together possibly; but we have brought them together without delay. Perhaps in this we have saved a thousand years. In bringing our two kinds of cherries together we have brought not one of each type, but dozens, or hundreds, each selected for its size, or appearance, or some probable quality which it contains within. In this simple selection of individual species we have saved other thousands of years.

With unerring accuracy we have seen that the pollen of the two kinds has been interchanged, so that the five hundred or so resulting seeds will represent the two heredities we wish to combine—and only these. Who can estimate how long it might have taken the bees and the winds, working even in neighboring trees, to effect specific crosses with the certainty which we have assured?

Now, with new heredities bundled up in our five hundred cherry stones, we plant them under every favoring condition in our shallow box, and, unless accident or mishap intervenes, we get new cherry trees from all, or, at worst, lose but a few. And now, with our sprouted cherry seedlings six or eight inches in height, we come to one of the most important short cuts of all—quick

fruiting, so that there may be quick selection. By grafting the smaller branches, fruit production is hastened from two to seven years. Our cherry seedlings are therefore grafted to a mature tree, and in two years they bear. The fruit is plucked, laid out, and tested by sight and taste for the qualities we set out to secure. Perhaps of the five hundred cherries spread before us none may come up to our standard; or perhaps one or two approximating it may show signs of further improvement which ought to be made. Eliminate the rest, and start afresh with these two—beginning at the very beginning with them again—grow more seedlings, produce quick fruit through grafting, and select again.

Every little while I have, as the neighbors choose to call it, a \$10,000 bonfire. In such a bonfire there might be 499 cherry plants out of the five hundred we have just made; there might be 99,999 rosebushes which had been brought to blooming in order to find the hundred thousandth which was not burned; there would be 1,500 gladiolus bulbs with market value of a half a dollar apiece, put in the fire after the one, or two, or the dozen best among them had been selected; there would be twenty thousand cactus seedlings, representing three to five years of care and watchfulness, but useless now, their duty done. It is better to run the risk of losing a perfected product, through the destruction of the elements that went into it, than to issue forth to the world a lot of second bests which have within them the power of self-perpetuation and multiplication, and which, if we do not destroy them now, will clutter the earth with inferiority or mediocrity.

When one considers that the cherry experiment is but one of a thousand



P. & A. Photo

A PROPHET HONORED IN HIS OWN COUNTRY

Luther Burbank and his wife reviewing a parade in his honor during the Burbank Jubilee at Santa Rosa, California, May, 1923. The citizens for miles around gathered to do honor to the man who had done so much to increase the wealth and fame of his adopted state

going on at the same time, and the manipulation of millions of seedlings involved, some idea of the scope of operations on the Burbank farms is gained.

The story of what has been done with flowers is a story in itself. Of the many new varieties created some of the best known are: the Burbank rose, the Giant Amaryllis, the Double-Petaled Amaryllis, the Shirley Poppy, the Blue Poppy, the Giant Shasta Daisy in its many forms.

No less important economically than the results with fruit experimentation have been the results of experiments with nut trees. We have chestnut *bushes* which bear nuts of the finest quality. Some of these chestnuts bear six months from planting the seed. We have found a way to make the walnut tree grow four times as fast as usual and yet produce wood that is of the best cabinet-maker's quality.

My studies have included the giant sequoia, largest of trees, down through the lumber and fruit trees, bushes, shrubs, vines, and plants, to the humblest garden herb, and the possibilities of plant development thus revealed are tremendous. They point the way to better grains, nuts, fruits, and vegetables, all in new forms, sizes, colors, and flavors, with more nutriment and less waste, with every poisonous and injurious element eliminated, and with the power to resist sun, wind, rain, frost, and destructive fungous and insect pests. Every one of these and ten thousand more are within the reach of the most ordinary skill in plant-breeding.

In reviewing the years, let me say in conclusion that, up until 1893, when my catalogue listed eighteen groups of new hybrid plants, the attitude of botanists and horticulturists generally had been one of profound skepticism as to the possibility of developing modified races by cross-breeding, or, indeed, by any means whatever in a limited period of time. But by selection and cross-breeding a troublesome weed has been made a beautiful flower; the plum educated to give up its stone; the cactus to shed its spine; the prune to become larger and sweeter; the walnut to thin its shell and grow richer meats; the rhubarb to produce in winter; and the calla lily to give out fragrance. These are but a few of the obvious accomplishments of my life's work as a breeder and developer of new forms of plant life. Some of the immediate and practical results are striking: whole communities have been built up by fruits that were made to improve themselves on my experimental farms at Sebastopol and Santa Rosa, California, as in the case of Vacaville, California, one of the great fruit-shipping centers; the size and value of the nation's potato crop has been materially increased; and a forage crop that permits stock-raising in arid and infertile regions has been introduced.

Striking as are these practical results of my work with plants—and there are many more equally impressive—they are of secondary importance to the establishment and demonstration of the principle responsible for them: *that by scientific selection new and valuable species of plants may be created in a brief term of years.*

THE ENCHANTED ISLE LAFAYETTE NATIONAL PARK

BY RONNE C. SHELSE

PHOTOGRAPHS BY HERBERT W. GLEASON AND OTHERS. PUBLISHED BY
ARRANGEMENT WITH THE BUREAU OF NATIONAL PARKS, WASHINGTON, D. C.



FROM THIS GREAT HEIGHT ONE LOOKS DOWN OVER LOFTY
PEAKS AND SURVEYS THE BLUE SEA

FOR generations Mount Desert and Bar Harbor have been known exclusively as summer resorts, famous for the wealth and fashion represented there and the social distinction of their residents. To-day, Mount Desert Island is a national park, a beautiful public playground; the latest gift of land from Uncle Sam to all the people.

✱ ✱ ✱ ✱



EAGLES, EMBLEM OF THE NATION, NESTING HIGH ABOVE THE CLIFFS AND FORESTS OF THE PARK

LAFAYETTE NATIONAL PARK

BY RONNE C. SHELSE

YEARS before the Pilgrims set foot on Plymouth Rock, Samuel Champlain, on a tour of exploration for Sieur de Monts, founder of Acadia, sailed his little craft into Frenchman's Bay and landed not far from the present site of Bar Harbor on Mount Desert Island, a mile off the Maine coast. To-day a great tract on this island so splendidly endowed with Nature's attractions has been converted by Uncle Sam into a playground for the American people. Lafayette National Park is the first and only government reserve to be set aside east of the Mississippi for the benefit and enjoyment of the public. Created by act of Congress approved February 26,

1919, it embodies in its name the deep sympathy of the American people for the cause of France in the World War and their abiding memory of past help and friendship.

The story of its creation is a lasting tribute to the generosity and perseverance of a few summer residents on the island who incorporated as the Hancock Trustees of Public Reservations and, after years of hard work in securing conveyances of titles, etc., finally gave to the Federal Government—gave without other consideration than that of public-spirited liberality—some 12,000 acres unsurpassed in natural beauty and rich in human interest. The leaders in this magnificent



THE GREAT HARBOR OF MOUNT DESERT FROM CADILLAC MOUNTAIN

philanthropy were Dr. Charles W. Eliot, president emeritus of Harvard, and George B. Dorr, Boston clubman; but such men as Bishop Lawrence of Massachusetts, the late Dr. S. Weir Mitchell of Philadelphia, and Messrs. John S. Kennedy, David B. Ogden, John I. Kane, and Henry Lane Eno, of New York City, also took an active interest. They saw the need, while there was yet time, of conserving some pleasant, wholesome breathing place for the inhabitants of the overcrowded Eastern cities. But, more than that, they sensed the need for preserving in its openness and unspoiled beauty a place where Nature and her creatures could be observed under conditions without parallel on the Atlantic coast.

Lafayette Park, being a gift of private citizens to the United States, is different from all the other recreational places of the people, which were formed from lands already owned by the nation. That, however, is but one of its many claims to distinction. Within the confines of this reservation, surrounded by the sea, is a combination of natural features unknown to the other areas set aside for the use

of the masses. Higher mountain peaks there are, to be sure, and bigger trees and deeper lakes, but nowhere among our national playgrounds is there to be found a more exquisite blending of Nature's gifts. Symbolic of its earlier associations in French and American history, the central range of granite mountains stands in a mighty line as the valiant soldiers of Lafayette stood. Huguenot Head, Champlain, The Flying Squadron, and other peaks in this bold range rise up, tandem fashion, for a distance of from ten to twelve miles across the island's length,

offering magnificent views of both land and sea. From the higher summits one can look out over forty miles or more of water to the horizon, or deep down on the tree tops in the glacier-scoured valleys below.

One enters Mount Desert by way of the splendid bridge which connects it with the mainland, and drives or walks over miles and miles of perfect highways—fine macadam roads, smooth and clean, or equally good dirt roads, practically free from dust. Down Schooner Head and along the Ocean Drive one skirts the sea from the eastern boundary of the park, past Seal Harbor, to Northeast Harbor, a distance of about fifteen miles of alluring scenery. This is a favorite trip of those that come to the reservation in automobiles.

No hotel or other concessions are maintained in Lafayette Park, but just outside the boundaries there are plenty of hostels of all kinds where excellent accommodations are offered. And if the motorist will have none of these, but prefers to live the whole time in the open, he can pitch his tent in one of the many delightful spots in or just outside the park limits, and know the full measure of out-



SITE OF ST. SAUVEUR MISSION COLONY
Founded in 1613. A spring of pure water is covered twice a day by the tide

door content. Headquarters fixed, he proceeds to explore the wonder isle. Cadillac Mountain, nearly 1,600 feet high, tempts the ambitious climber, but for real thrills he will turn to Precipice Path, and scale the vertical front of Champlain Mountain by means of iron rings driven into the solid granite. The top of this peak is considerably over a thousand feet high. All about are hills of varying heights to suit the inclinations of any vacationist. The Flying Squadron, 1,268 feet above sea level, ranks next to Cadillac; Pemetic Mountain follows close behind with



LAFAYETTE NATIONAL PARK OFFERS MOTOR VACATIONISTS A HAPPY CAMPING GROUND

1,262 feet; and thus they stand in the scale of figures: The Beehive, The Bubbles, Norumbega, Acadia Mountain, St. Sauveur, each as interesting as the other and all together possessing a rare combination.

Bound on all sides by the "vasty deep," Mount Desert Island is cut nearly in half by Somes Sound coursing in from the Atlantic. This narrow inlet of the sea is the nearest thing in the United States to the famous Norwegian fiords. And between the forest-clad hills are high-lying lakes and ponds, among the larger of which are Eagle Lake and Jordan Pond, Echo Lake and Long Pond. Sailing or boating is always in order, and fishing, too, for those that love the sport. Visitors to the park are bound down by no finicky regulations. All that a beneficent government asks is that they observe the same rules of conduct that they would on an estate of their own. The camps must be kept neat and orderly and campers must be extra careful of their fires, for this constitutes one of the park's greatest perils. Hunting is positively forbidden, and rightly so, for the preserve is a sanctuary of wild life, both plant and animal, and has its own biological laboratory for the advancement of science.

Lying in the coast migration route and being the meeting place of feathered tribes, it is a famous bird reserve. Edward Howe Forbush, Massachusetts State ornithologist, has told an appealing story of how, when America was first discovered, the Maine coast was the habitat of myriads of land and water birds; of how the coast was swept as by a destructive storm by the continual hunting and shooting of birds and the plundering of their nests for food and commercial purposes until only a pitiable remnant of bird life remained; and of how finally the tide was turned by the passage of the national law for the protection of migratory birds and the establishment of Lafayette Park as a refuge for both birds that breed locally and those that travel long distances with the changing seasons.

Mount Desert is singularly rich as a botanical region. Around the bases of the great hills and down to the water's edge grows the dense forest of hemlock, spruce, and pine mingled with hardwood trees, exhibiting in its best form the life of the Canadian zone. Wild flowers, strikingly beautiful and abundant in season, add a touch of matchless color to this fairyland of nature.



THE NARROWS VIEWED FROM CADILLAC MOUNTAIN



Courtesy Geo. B. Dorr and "Natural History"

PAST THESE ISLANDS SAILED CHAMPLAIN INTO THE HARBOR OF FRENCHMAN'S BAY

The view is taken from Champlain Mountain, one of the "wild and lonely peaks" that suggested to the discoverer the name
Isles des Monts Déserts



THE ENTRANCE TO SOMES SOUND VIEWED FROM BLUE MOUNTAIN

On the edge of this picturesque body of water occurred the first conflict between the French and the English for the control of North America



CHAMPLAIN ANCHORED OFF THE COAST OF MOUNT DESERT ISLAND IN 1604



Courtesy Geo. B. Dorr and "Natural History "

THE GRIM CHALLENGE OF CADILLAC CLIFF MET ON A MIDSUMMER DAY BY THE
APPALACHIAN MOUNTAIN CLUB

An organization of hardy climbers who early showed the way to seekers for health and pleasure in the East's one
and only national playground



HERE, TOO, THE TRAVELER LOOKS DOWN OVER THE TREE TOPS AND THE VALLEYS



A RARE VISTA OF SOMES SOUND FROM A CLEFT IN THE ROCKY COAST

This is the only glacial fiord on the eastern coast of the United States



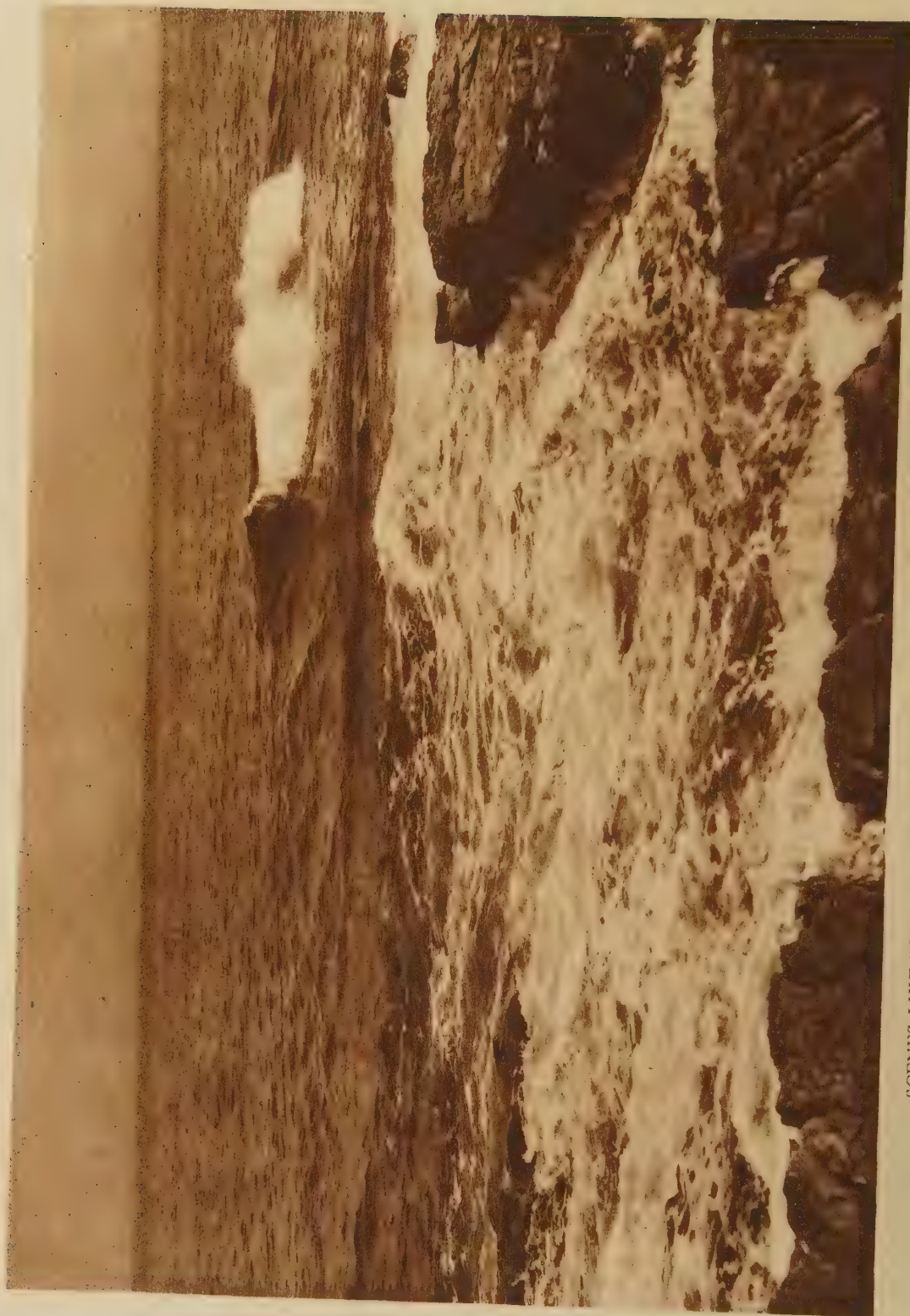
THUNDER HOLE ON THE OCEAN DRIVE



A WOODLAND PATH BY THE SPRING THAT BEARS THE NAME OF SIEUR DE MONTS,
FOUNDER OF ACADIA AND COMMANDER OF EARLY VOYAGES TO AMERICA



A STONE PATHWAY ON "THE FLYING SQUADRON," ONE OF THE PARK'S BOLDEST PEAKS



SCENES LIKE THIS ARE UNKNOWN IN OTHER UNITED STATES GOVERNMENT PARKS



SOMES SOUND IS A BOATING PARADISE FOR SUMMER VISITORS



SAILS ON FRENCHMAN'S BAY ARE REMINDERS OF THE FIRST COMERS, WHO TOUCHED THESE ISLAND SHORES OVER THREE CENTURIES AGO



THE SIEUR DE MONT'S SPRING IN A SETTING OF IDYLIC BEAUTY



THE TRUTH ABOUT THE RAIN TREE ❖

❖ ❖ ❖

The story of the rain tree crops up every year or so in the newspapers, and occasionally gains a foothold in more weighty publications—such as consular reports. There are several versions of the story, but they all agree in describing a vegetable marvel which sheds a copious supply of water from its leaves, even in the driest weather. As a rule, the writers urge the introduction of this tree in arid regions, such as our Southwestern States, in order to make the desert blossom as the rose. In Australia, nurserymen have actually sold a so-called rain tree on a large scale, claiming that it would help to solve the irrigation problem of that country.

Some descriptions of the tree are quite circumstantial with regard to its rain-producing qualities. Thus one typical newspaper article says:

"The tree grows readily in any soil, reaching a large size, and has a luxuriant foliage, with a remarkable power of collecting and condensing atmospheric moisture. Its capacity, moreover, is increased by the usual heat of a drought. The water falls from the leaves and oozes from the trunk, and forms veritable rivers, which can be led in irrigating canals to any point desired. A single tree is estimated to average nine gallons of rain a day. Making liberal allowance for evaporation, a square-mile grove of the trees would supply for distribution about 100,000 gallons of water daily."

What is the truth about this alleged marvel?

The name "rain tree" has been given to a beautiful and very common tree of tropical America. The name is probably due to the fact that the tree has the habit of closing its leaflets before and during rains, and not to any tendency to shed water from the leaves.

In humid tropical jungles, especially at night, many trees and other plants draw up from the soil more water than can be evaporated at the surface of the leaves and branches. Hence some of it collects in liquid form, and trickles to the ground. In a dry climate this never happens, because all the moisture pumped up from the soil passes off as vapor into the thirsty air.

Some rain-tree stories undoubtedly owe their origin to the activities of plant lice, scale insects, and the like, which occasionally produce veritable showers of "honeydew" beneath the trees on which they assemble. This curious process may sometimes be witnessed beneath the shade trees of our American city streets.

The original rain-tree story, as found in

the narratives of early voyagers back as far as the fifteenth century, located the tree in the island of Ferro, one of the Canaries. This island has no springs and a scanty rainfall, but, according to the story, derived an ample supply of fresh water from a single tree. The accompanying picture, adapted from one published in 1748, shows the rain tree in full operation.



From E. T. Charton's "Voyageurs anciens et modernes," Paris, 1863

THE RAIN TREE OF THE ISLAND OF FERRO

The rain tree of the island of Ferro is not necessarily mythical. The island is mountainous, rising in the interior to a height of nearly 5,000 feet. According to a recent article by Dr. G. V. Perez, the uplands are frequently enveloped in drifting clouds, which deposit a great deal of their moisture on the trees and other vegetation. This moisture drips to the ground in a steady stream. The natives say that the famous rain tree that once supplied the whole island was blown down in a storm, but there are still trees in the Canaries that "rain" in the manner just described.

It is interesting to note that in Madagascar, a country of little rain, there is a so-called "traveler's tree" whose huge thick leaves form reservoirs that hold a quart or more of palatable water. *Erskine Lee.*

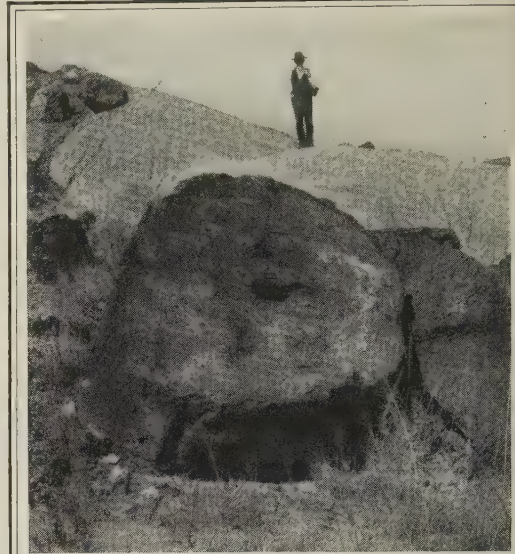


TREES OF SOLID STONE

BY C. F. TALMAN

What is your mental picture of a petrified forest? When you hear the word "petrified" you think of the wonders wrought of old by the Gorgon's head, and your idea of a petrified forest may be almost as far from the truth as the description attributed to Captain Jim Hance of "a forest of petrified trees, with petrified birds flying through petrified air, singing petrified songs."

The petrified forest of Arizona is more like an immense logging camp than a forest. The trunks lie prostrate and shattered upon the ground, like the shafts of innumerable temples ruined by a stupendous earthquake. Geology tells the story of this forest: how the trees once grew beside an inland sea where now is the gorgeous Painted Desert; how the fallen and water-logged trunks were buried beneath the sediment of the sea bottom; how, with the slow sinking of the land through long ages, more and more mud and sand was laid upon them and slowly hardened into rock thousands of feet deep. Meanwhile, the wood decayed and was gradually replaced, cell by cell and fiber by fiber, with mineral deposits from the water, and the whole consolidated under the enormous pressure of the rocks. Thus was the miracle wrought of changing the woody tissues not merely into stone but into multicolored gems—chalced-



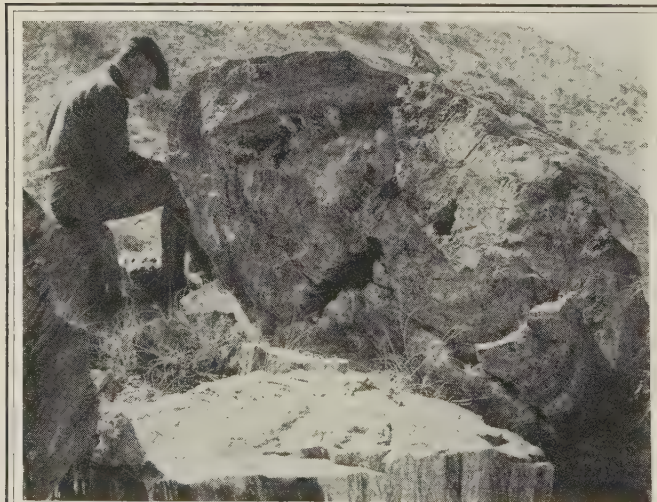
Courtesy Atchison, Topeka & Santa Fé Ry.

SECTIONS OF TRUNKS IN THE PETRIFIED FOREST

These smooth breaks evidently occurred after the forest turned into stone. Ordinary wood could not be broken in this way

ony, opal, and agate—so hard that it takes diamond dust to cut the logs to-day, and an excellent quality of emery is made from them. Later the slow seesaw of the ages carried the land upward, and then the rain, the wind, and the frosts of winter began to eat away the coverlet of rock, until at last the trees were laid bare. This process of erosion, which wears away the softer rocks but leaves the hard petrified trunks intact, is still going on. Nobody knows how much of the forest is *still underground*.

The Petrified Forest Monument includes five separate tracts, or forests, all accessible from the railroad station of Adamana, the name of which perpetuates the fame of a pioneer rancher of the neighborhood, Adam Hanna. In the First Forest the principal curiosity is the Natural Bridge, consisting of a great petrified trunk of jasper and agate spanning a canyon sixty feet wide. The Second Forest, two or three miles farther south, contains some of the largest and best-preserved trees, including the Twin Sisters, lying side by side. The Third Forest, also known



Courtesy Atchison, Topeka & Santa Fé Ry.

A SCENE IN THE THIRD FOREST

The Third or Rainbow Forest is the largest individual group of petrified trees in the Reserve

as the Rainbow Forest, on account of its marvelous coloring, lies thirteen miles southwest of Adamana. The Blue Forest is the smallest of the five. It is east of Adamana, and was discovered by the late John Muir. The Sigillaria Forest, to the north, is interesting not only for its fossil trees but also on account of commanding splendid views of the Painted Desert.

Apart from their scientific interest, these relics of primeval vegetation fascinate the visitor, because of their profusion of gorgeous color. One rhapsodist has described the Petrified Forest as "the most brilliant aggregation of jewels on the globe," and the myriads of glittering chips that strew the ground of the forest have been compared to fossil butterflies. The beauty as well as the hardness of the fossil wood attracted the attention of the Indians in prehistoric times. Logs of this material were used in building ancient houses, the remains of which are still to be seen in the forest. "It is probable," says Dr. Walter Hough, of the Smithsonian Institution, "that prehistoric builders never chose more beautiful stones for their habitations than the trunks of these trees which flourished ages before man appeared on earth."

From the same material the Indians fashioned hammers, arrowheads, and knives, and as these were used in barter with the surrounding tribes they are found to-day in In-

dian ruins hundreds of miles away from the forest. Under the names of "wood agate" and "wood opal," the fossil wood has been cut and polished to make floor tiling, mantels, clock cases, and table tops. A factory was also established at Adamana for grinding up the wood to make emery. At the same time relic-hunters were carrying away beautiful fragments, and, worst of all, many of the logs were blasted for the sake of getting the quartz crystals embedded in them.

These acts aroused violent protests on the part of the people of Arizona, and the agitation resulted in the forest being set aside in 1906 as a national park under the control of the Federal Government.



Courtesy Atchison, Topeka & Santa Fe Ry.

GIANT LOGS OF CHALCEDONY IN THE NORTH FOREST



A GLITTERING BRIDGE OF MANY COLORS

This agatized log, a hundred feet long, connects two mesas, or plateaus, that border the First Forest



PLANTS THAT FEED ON INSECTS

BY MAY TEVIS

Anyone that has ever known the delight of tending a garden, or has even cherished a single geranium on the ledge of a window, knows all too well that insects eat plants! Indeed, there is a constant war going on between the insect world and the members of the vegetable kingdom. On the part of the plants this war is chiefly defensive, carried on under the protection of armor in the form of scales, spines, and thorns, or by the secretion of offensive or poisonous substances.

But there are certain plants that go a step further and carry the war into the country of the enemy. They not only defy insects but lure them, trap them, and eat them! Unbelievable as it may appear, there are a large number of plants in various parts of the world with an appetite for animal food—an appetite which they gratify by catching, killing, and digesting insects and other small creatures. This startling habit is not confined to a single family or order of plants. On the contrary, it is

found among widely different orders, chief of which are the sundews, the pitcher plants—"true" and "false"—and the bladder worts. Different as these plants are in their form, growth, and structure, they have certain things in common besides their habit of catching insects and "eating them alive." To begin with, they are all found in swampy or marshy ground, or in water. Because such localities are poor in nitrogen, these water plants have formed the habit of catching their nitrogen literally on the wing, in the form of living prey.

Various are the methods by which victims are lured and trapped. Some plants secrete

an acid fluid containing a ferment which is either very similar to pepsin or identical with it; in other words, they may be considered to possess a sort of gastric juice.

The sundews derive their poetic name from the glittering drops of liquid with which they deck themselves to attract their unhappy victims. The drops consist of a substance which holds insects as firmly as if they were imbedded in glue.

The common sundew, which is found plentifully in the marshy lands of New Jersey, is also a familiar British plant, and it was a specimen of this which led Charles Darwin to begin the curious experiments afterward embodied by him in his delightful volume "Insectivorous Plants." This plant has a rosette of round leaves at the base; from

the center of this rosette a graceful flower stalk springs. The whole top of the leaf is covered with hairs which bear glands, and it is the latter that secrete the dew which gives the plant its name. These hairs are often called tentacles, due to their power of motion. When a vagrant fly happens to touch one or more of the tentacles it is arrested by the sticky liquid, and its struggles to free itself bring it in contact with other tentacles. These at once begin to curve inward; the



TWO DISTINCT SPECIES OF
INSECT-EATING PLANTS

The one on the left is an East Indian pitcher plant, while the one on the right is a Venus's flytrap. The former traps its victims in the pitcher, while the latter closes like the leaves of a book, and imprisons its prey between its sides

more violently the victim struggles, the greater the stimulation of the relentless tentacles and their glands, until the doomed creature is held as helpless as if in a spider web. Often, too, the whole leaf curves upward so as to form a little cup; into it the glands pour out the digestive fluid. The leaf and its tentacles remain curved until the living food thus captured has been digested and its nutritious juices absorbed to feed the plant.

Darwin proved that the plant was really fed by this process. He covered two sets of plants with gauze to prevent their catching flies; then fed one set abundantly, while he gave the other no food except what its roots

took up from the soil. The first set became strong, green, and flourishing, while the second set pined, dwindled, and faded. Finding that the sundew reacted toward this living food just as the stomachs of carnivorous animals do toward meat and other foods containing protein, Darwin offered the little plant a rich variety of other foods containing nitrogen, as well as various non-nutritious substances, such as bits of glass, wood, thread, and hair. While the plant would react to the latter, it would soon let them go, on finding they were not good to eat, and after that it refused to contract upon touching them. Such dainties, however, as drops of milk, or the juice of raw meat, or bits of hard-boiled egg, it greedily devoured. The sundew also appeared to like certain cooked vegetables, particularly boiled cabbage. We have Darwin's word for it!

Bladder worts have narrow needle-like leaves and no roots. They float about near the surface of the water in ponds and ditches, and seem to prefer the stagnant water found in such places. Each leaf bears one or more small hollow vesicles, or bladders. The bladders are filled with water, and generally contain bubbles of air. At the end they bear six or seven long pointed bristles. Beneath the bristles lies the entrance to the bladder, which is closed with a valve that opens inward like the lid of an eel-pot. Many a tiny aquatic creature, swinging gayly and unsuspectingly along, pokes its nose against the colorless elastic valve and swims into the green bladder, only to find itself imprisoned in a living tomb. After repeated experiments, Darwin concluded that the worts did not digest the prey thus captured, but merely absorbed needed ni-

trogen from the decayed bodies of the victims.

Quite as fascinating in their habits, and even more picturesque of aspect than the insect traps already described, are the pitcher plants. As their name implies, all species of this family are provided with hollow receptacles of curious shape. Some resemble delicately modeled urns or goblets. Others follow the graceful flaring lines of horns or trumpets. Most curious of all are those that look almost exactly like a syrup pitcher, lid and all. Those pitchers that have lids belong to the *Nepenthes* family, of which there are thirty species growing in Australia, Borneo, and adjacent islands. The side-saddle flower is common in the swamps of our Eastern States. The liquid in the trumpet-shaped pitcher, with its lovely spreading lip, appears to have no digestive power; it merely traps the insects.

Whatever the shape of the receptacles, they are all modified leaves, and all of them bait their trap with bright colors and with a richly spread piece of nectar from their honey glands. The cups or pitchers are usually half full of liquid. In some cases this is a true digestive fluid, like the gastric juice of animals, being a dilute acid containing pepsin, in which the prey is digested.

Another ingenious feature found in the pitcher plant is that a portion of the smooth waxy wall above the fatal liquid is so slippery as to offer no foothold to the struggling captives when they attempt to escape. Just above this area is a region covered with hairs or bristles, extremely easy to crawl down, as many an insect has found to its sorrow, but offering a bristling hedge of bayonets to bar the way when it tries to get out.



FIVE OTHER KINDS
OF INSECT TRAPS



IZAAK WALTON

Patron Saint of Anglers

BY A. A. HOPKINS

"Among all your quaint readings, did you ever light upon Walton's 'Compleat Angler?'" asked Charles Lamb of his friend Coleridge. "It breathes the very spirit of innocence, purity, and simplicity of heart; it would sweeten a man's temper at any time to read it; it would Christianize every discordant angry passion; pray make yourself acquainted with it." Doctor Samuel Johnson said he considered "the preservation and elucidation of Walton a pious work."

Within the past year excuse of a most engaging character has arisen for reviving discussion of the life and work of the "Father of Angling." The authorities of Stafford, England, where Walton was born August 9, 1593, desired to have a memorial to him, and chose the Izaak Walton cottage at Shallowford on Trent. Walton left the cottage at his death to the corporation of Stafford. As the years passed, the little house became dilapidated and it was necessary to rally friends to save it. At one time it was reported that the cottage had been purchased by Americans, and would be brought to the United States, but this was a misstatement. The seventeenth-century dwelling will remain among its native fields, a piscatorial shrine at which the anglers of the world will foregather. Funds to maintain the cottage as an object of pilgrimage for devotees of the rod and line have been generously contributed by friends of the late Julien T. Davies, a New York lawyer who did much to dignify the sport of angling.

Little is known of the early life and education of "Honest Izaak," but there is a record of his having been an ironmonger. He lived in Chancery Lane, London, and later in Fleet Street, and waxed fairly prosperous, so that he was able to retire in 1643. It is thought that he spent much of his time in the cottage and wrote there many of his essays. He died at the age of ninety, and now lies buried in the south transept of Winchester Cathedral.

Walton's literary output was extensive, but only one book has

survived the centuries—the incomparable "Compleat Angler." No work by an English author except "Pilgrim's Progress" and "Robinson Crusoe" has been so frequently reprinted, generation after generation. Over a hundred editions were issued in the nineteenth century alone.

Concerning the practicality of this ingenuous guide to angling, a writer of our own day observes "that the ordinary Philistine angler, to whom all that pretty warbling talk of birds and honeysuckle hedges has no appeal in comparison with a creel full of speckled trout, thinks but small beer of poor Izaak's antiquated angling methods. But who minds that? Angling was simply an excuse for Walton's artless garrulity, a peg on which to hang his ever-fragrant discourse of stream and meadow. He followed angling not so much to fill his basket as to refresh his spirit and store his memory with the sweetness of country sights and sounds."

Walton himself begged readers to take notice that in writing his discourse he had made himself "a recreation of a recreation," and, so that it should not read "dull and tediously, had in several places mixed some innocent, harmless mirth. And I am the willinger to justify the pleasant part," he avers, "because, though I can be serious at seasonable times, yet the whole discourse is a picture of my own disposition, especially in such days and times as I have laid aside business, and gone a-fishing."

"The Compleat Angler" wreathes a halo of fine literature above a gentle sport; in its nature and art are reconciled in choice simplicity and haunting cadences.



Wide World Photo

IZAAK WALTON'S COTTAGE

Object of pilgrimage for devotees of the rod and line

THE DRAMATIC STORY OF COTTON

By RICHARD HOADLEY TINGLEY

The cotton industry is probably the greatest single industry in the world, if the cultivation, manufacture, commerce, and uses of all of its products are considered. It is one of the oldest, for, outside of food, history chronicles few of greater antiquity. The cotton of to-day is the same cotton mentioned in Hindu history two thousand years before the Christian era; the cotton plant is the same shrub referred to in the Sacred Institutes of the Manu, in which the inhabitants of India reverently extolled the mystic plant that supplied their clothing.

There are approximately two billion inhabitants in the world, and every one of them wears cotton, in some form, every day from the time he is born to the day of his death—and he carries it with him to the grave. This brief statement to qualify cotton as being one of the most essential commodities produced from the soil.

Up to the early part of the last century, when America took the lead, India had been the world's chief source of cotton; to-day India ranks second.

Six or seven centuries before Christ, the Hindus had attained great proficiency in the art of spinning, weaving, and printing cotton. Some of their fabrics were so exquisitely fine that they have been compared with gossamer web. They were highly prized, and available only for the princes and nobles of the land; the coarser weaves served as clothing for the common people.

Following the trail from India to Europe, blazed by Alexander the Great, commerce has since continued to flow back and forth

between these two continents. By no means the least valuable of the commodities that moved in the stately caravans over hundreds of miles of intervening desert and plain were the beautiful fabrics of cotton.

Profane and Biblical history is replete with references to cotton and cotton fabrics. Nearcus, one of Alexander's generals, records that "a shirt or tunic, reaching to the middle of the leg, a sheet folded around the shoulders, and a turban rolled about the head" was the costume of India—an almost exact counterpart of the dress of the natives of that country to-day. The Book of Es-

ther describes the feast of Ahasuerus, whose royal banquet halls were adorned with "white, green, and blue hangings"—cotton fabrics from India. It is clear that the conventional dress of the Biblical Jews was of cotton, and that cotton was as indispensable to the Chinese of the time of Confucius as now.

Although there are now many modern cotton mills in India, her glory and prestige in the manufacture of the finer fabrics of ancient days have gone. Nevertheless, in the interior, the village artisan

is at work spinning and weaving, using the same methods employed by his ancestors of thousands of years ago. In fineness of fabric, however, he cannot now compete with American mills. It was during the Dark Ages that a most extraordinary myth built itself around the origin and growth of cotton, and for centuries clung with remarkable tenacity. The origin of this myth may be traced to Alexander's soldiers, who referred to cotton as a "vegetable wool," the fleece of a lamb which grew on a bush or tree. Theophrastus perpetrated the myth in his botany. Herodotus, the "Father of History," fell into the popular misbelief. Thus the fable of the "vegetable lamb" was spread over the world. The name



THE "VEGETABLE LAMB"

Sir John Mandeville, a world traveler of the fourteenth century who wrote interesting, if not accurate, accounts of his travels, said of the cotton plant which he found in India: "Within is a little beast of flesh, bone, and blood. And men eat both the fruit and the beast. Of the fruit I have eaten, although it were wonderful"



THE SOUTH'S FIELD OF THE CLOTH OF GOLD

Three hundred years ago a few cotton seeds were brought to America from Egypt, India, and Malta. They have multiplied until they now produce over five billion pounds of cotton each year

of this fabulous animal finally became fixed as the "Scythian Lamb," and subsequently as the "Tatary Lamb." Writers as late as the seventeenth century averred that they had actually seen this wonderful lamb in Russia, growing out of a tree, reaching down from its elevated position to feed upon the grass growing beneath it. Sir John Mandeville, that indefatigable traveler and not too accurate writer, vividly describes the "Vegetable Lamb" which he had actually seen and eaten while on his journeyings in strange lands. Mandeville lived in the fourteenth century. He was a peer of the realm and a man of education and standing. What he wrote in his "Voiage and Travaile" was eagerly read and accepted. It is said that his book had a larger circulation and survived longer than any other publication of that period.

The history of cotton in Europe is a history of hundreds of years of struggle for place alongside its ancient rivals, flax and wool. From the thirteenth to the sixteenth centuries, says Scherer, "wool was king just as surely as cotton was king in America south of the Mason and Dixon Line in the nineteenth century." The Alexandrian caravan route had given way to the newly discovered water route to India, and large quantities of muslins, chintzes, and calicoes began to flood Europe. Woolen and linen manufacturers and workers feared for their industry, and their influence was strong enough to obtain edicts against the manufacture of cotton

goods in many countries, and embargoes against the importation of the fabrics from the East. Trade wars were always waging, the balance being sometimes on one side, sometimes on the other.

But cotton would not down. Despite edicts, embargoes, and acts of Parliament, cotton was, year by year, establishing a firmer foothold in Europe, particularly in England. An industrial revolution greatly aiding the cause of cotton was on the way. Europe's individual workers who made their homes workshops were to be transformed into the forerunners of the factory workers we know to-day. George Eliot's "Silas Marner" describes the conditions under which the industrial weaver toiled at his home, and the transformation which took place within the life of Marner after the introduction of machinery and centralization of manufacture. Kay, Hargreaves, Arkwright, Crompton, and Watt came in quick succession to complete the revolution, and the moving cause in this history-making epoch was cotton. It not only furnished impetus to the cotton industry, but, also sympathetically, it stimulated industry of all kinds. Woolen manufactures, instead of suffering by the advent of cotton, as had been predicted, shared in the general prosperity that followed.

Although cotton is indigenous to American soil, and grows wild as Columbus found it in the Caribbean Islands, the product of our Cotton Belt is almost entirely the result of



THE NATION'S BILLION-DOLLAR CROP

The world's average yearly cotton crop is approximately twenty million bales, or ten billion pounds. The United States supplies considerably over half of this amount, the value of which varies from a billion and a half dollars to four billion dollars, depending on the market value of cotton

cultivation from seeds imported from the West Indies, Egypt, India, and Malta. It was fully three hundred years after the time of Columbus before cotton became a commercial factor on this side of the Atlantic. In the meantime the American colonists were dependent upon Europe, and upon India, through Europe, for their cotton goods. On a very small scale cotton was cultivated in Virginia, Maryland, South Carolina, and even as far north as Delaware. Great Britain had placed an embargo on the exportation of cotton-mill machinery, and the colonists had yet to learn the export value of their product, which had barely reached 138,000 pounds in 1792. This was the year before Eli Whitney revolutionized the industry by the invention of the cotton gin. Cotton at once assumed a leading position, and held the center of the industrial stage in the South from that time till the outcome of the Civil War. During these seventy years it is safe to say that cotton exercised a more potent influence in the making of the commercial, economic, and political history of the United States than any other factor.

But though England might prevent the exportation of her cotton-manufacturing machinery, she could not place an embargo upon the exportation of the brains of her mechanics. It was in this way that Samuel Slater, the "Father of American Manufacture," brought in his head models of the Arkwright and other machinery to this

country and set up the first successful cotton factory in the United States at Pawtucket, Rhode Island, where it still stands. Slater's mill was ready for operation about the time that Whitney's invention had begun to produce a flood of "vegetable wool" from the South—a flood that has never ceased to flow from that direction to the North and to Europe.

It was cotton that was the foundation of the slave system of the South, which nearly disrupted a nation. It was the scarcity of cotton in England that brought untold distress and misery to the operatives of the mills of Manchester and Lancashire during the American Civil War, when the cotton ports of the South were blockaded by the gunboats of the North. Cotton still exerts a leading influence upon the politico-economic question that is perennially with us. Cotton has been called the greatest single factor that has influenced the politics of this country in the last century.

For many years America held a place in the center of the stage, but a little insect, coming over the border from Mexico, has found its way into our cotton fields and raised havoc. No part of the world has yet been discovered where cotton of the peculiar fiber of that grown in our great Cotton Belt can be grown. Unless something radical is done toward eliminating the pest, it may soon be necessary to write another chapter in the story of cotton.



THE EARTH GIVES UP ITS BIGGEST BEAST

BY JOHN SEYMOUR

A world's record in the discovery of mighty beasts has been established in Mongolia by the Andrews expedition, sent out in 1921 under the auspices of the American Museum of Natural History, New York.

Fossil remains of the largest land animal the planet has ever borne—a colossal *Baluchitherium*—was found on the northeast slope of the Altai Mountains, 450 miles south-east of the ruined city of Karakorum, formerly center of the medieval empire of Genghis Khan, the Mongol chieftain.

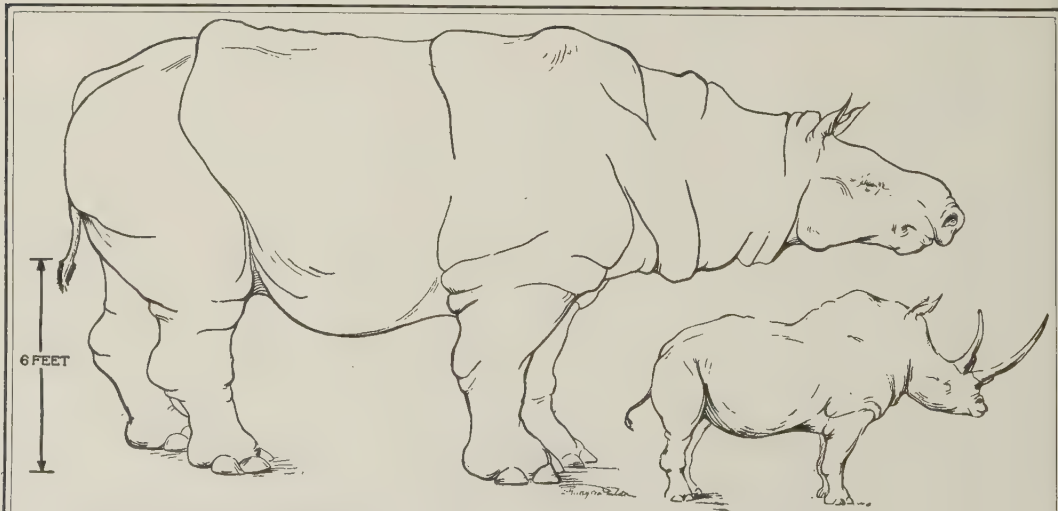
The discoverer of the monster skeleton was Walter Granger, a member of the expedition. The *Baluchitherium grangeri* has been named in his honor. Professor Henry Fairfield Osborn, the distinguished president of the American Museum of Natural History, estimates that the beast was something like twenty-four feet long and twelve feet tall in life. It belonged to the same family as our modern mammals, the horse, the tapir, and the rhinoceros. Contrasted with the white rhinoceros, its nearest and largest living relative, its size is as a cat compared with a kitten. Its enormous size and thick tough hide probably made it immune to the attacks of all enemies, even the saber-toothed tiger, extant at the same time.

The specimen recently arrived in the

United States is sufficiently complete to establish both the size and the nature of the animal, since it includes not only the skull but some of the vertebræ and the bones of the leg and foot. The skull itself was broken into hundreds of pieces, but by the patient care of the museum experts many of these have already been fitted together.

The *Baluchitherium* is supposed to have lived on vegetation of one sort or another, and its huge teeth were able to crush with the power of a modern steam-driven machine. The fact that the monster was herbivorous indicates that the barren plains and deserts of Mongolia were once covered with a thick and luxuriant plant life, such as the rhinoceros now feeds upon in the dense jungles of Africa. This, however, was some two million years ago, plenty of time for those changes to have taken place which are evident in the present character of the land.

The expedition that discovered the Biggest Beast went by train northward from Pekin, China, and continued by motor-car into Mongolia. A camp of five weeks was made in a beautiful valley crowned by the Altai Mountains. This rich valley yielded not only the famous *Baluchitherium* skull which has caused so much excitement in the world of science, but many other fossils, including a sensational new species of Dinosaur, of which a complete skeleton was found, remains of the rhinoceros, and bones of the wapiti, also known in the northwestern part of our own continent, where it is sometimes called the American elk.

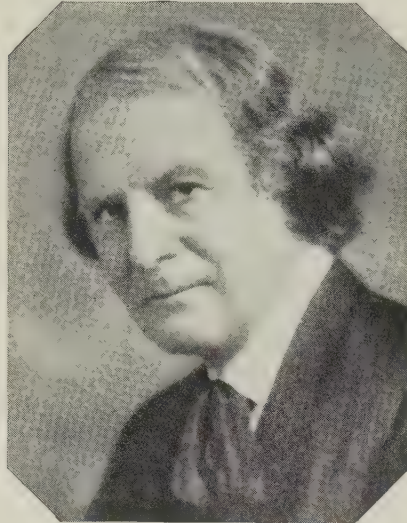


THE KING OF BEASTS

This record mammoth was found in Mongolia by an expedition sent out under the auspices of the American Museum of Natural History. The drawing shows its size in comparison with its next largest living relative, the white rhinoceros.

Who Is the Great Man?

"Listen and I will tell you:
 "HE IS GREAT who feeds other minds.
 "HE IS GREAT who inspires others to think for themselves.
 "HE IS GREAT who pulls you out of your mental ruts, lifts you out of the mire of the commonplace, whom you alternately love and hate, but whom you cannot forget.
 "HE IS GREAT to whom writers, poets, painters, philosophers, preachers, and scientists go, each to fill his own little tin cup, dipper, calabash, vase, stein, pitcher, amphora, bucket, tub, barrel or cask."



From Hubbard's Little Journey on Jean Jacques Rousseau

Was Elbert Hubbard a Great Man?

Listen! And These Men Will Tell You

LUTHER BURBANK—"Centuries may elapse before such a mind may appear again. His loss is a world-wide calamity."

JAMES WHITCOMB RILEY—"Hubbard's was a mountain spirit, free, strong and utterly untrammelled in this very complicated world of ours. We can ill afford to lose his voice."

THOMAS EDISON—"Elbert Hubbard has been of big service to me in telling me the things I knew, but which I did not know I knew until he told me."

ROBERT L. OWEN—"Elbert Hubbard took some of the cobwebs out of my brains and I learned from him some of the wisdom of simple living."

WILBUR NESBIT—"Anyone who reads Elbert Hubbard for two years is an educated person whether he has ever trod a college campus or not."

J. OGDEN ARMOUR—"Little Journeys form that whole five-foot shelf of books for me."

FRANKLIN K. LANE—"He was a Twentieth-Century Franklin in his application of good sense to modern life."

HORACE FLETCHER—"Hubbard packs more wit, wisdom and inspiration in the same space than any other writer who ever lived."

HUDSON MAXIM—"In his Little Journeys Elbert Hubbard has done what no other biographer has ever done so well. He has given us a look not only into their deeds, but also in the heart and soul of their personality."

BEN B. LINDSEY—"I followed him in his Little Journeys for more than a decade. I am better for it—as thousands of others are. If I have succeeded in doing anything worth while he is certainly one of the men to whom I am indebted."

These men, who everyone knows, are among the multitudes whose "minds have been fed" or whose thoughts have been inspired by these miniature biographies which have made Elbert Hubbard immortal.

Little Journeys to the Homes of the Great

As a Memorial to their founder, The Roycrofters have gathered the complete series of Little Journeys—182 in all—into 14 beautiful volumes, which are now ready for distribution. A booklet descriptive of the Memorial Edition and containing Hubbard's Last Talk to The Roycrofters before he sailed on the "Lusitania," together with all particulars of our special Introductory Price and easy-payment plan, will be sent to all who mail the coupon to us within thirty days.

The Roycrofters, East Aurora, Erie County, N. Y.

FREE BOOKLET

The Roycrofters,
East Aurora, N. Y.

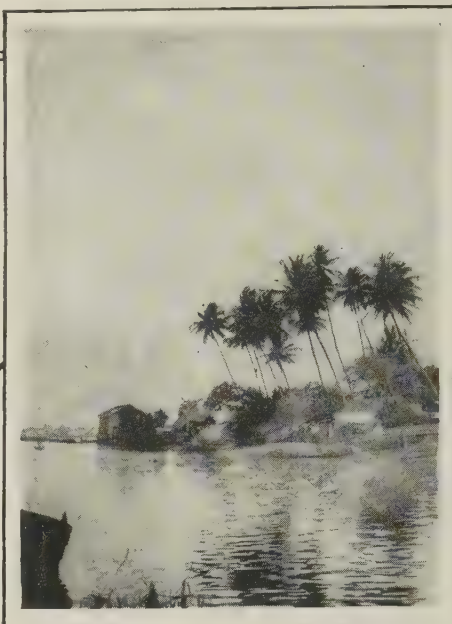
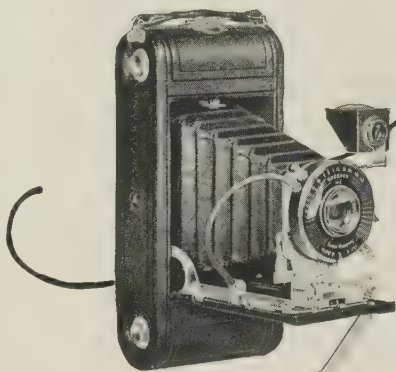
Please send me, without obligation, Hubbard's Last Talk to The Roycrofters and full particulars of the Memorial Edition of Little Journeys, the introductory price and easy-payment plan.

Name

Address M-8-23

No. 1 A Ansco Speedex

Ansco F 6.3 Anastigmat Lens, $4\frac{1}{4}$ inch focus; Optimo or Ilex Acme Shutter, $2\frac{1}{2} \times 4\frac{1}{4}$, 6 A. Film. Price \$45.00. Others this size \$17.00 and \$27.50.



They always turn out better with the No. 1 A Ansco Speedex

THE unusual adaptability of the No. 1A Ansco Speedex has made it a favorite with travelers. An extra fast shutter (up to $1/300$ second), and an F 6.3 lens, permit fast exposures of rapid motion in good light, as well as snapshots under unfavorable conditions.

The No. 1A Ansco Speedex is an aristocrat in appearance. Covered with genuine Persian morocco leather, slim and graceful, yet very strongly built, it appeals particularly to those who appreciate fine things.

Be sure to see this truly wonderful camera before going on your next trip. Note the many exclusive features which make it really difficult to get poor pictures.

—and remember Ansco Speedex Film

In any make of camera its wider range of exposure makes it "fit the light, dull or bright." In combination with an Ansco camera it insures the largest possible percentage of fine results. Look for the red box with the yellow band.

ANSCO COMPANY, BINGHAMTON, N. Y.

CAMERAS ANSCO FILM

The red box with the yellow band. Fits any make of camera.



To the Philippines- \$375.00 from Seattle



IT costs as little (or less) to travel to the Philippines as it does to live in a large hotel. If you are seeking an ocean trip, investigate this one! Few people appreciate the really wonderful travel opportunity of a trip to the Philippines from Seattle. The American flag ships of the Admiral Oriental Line fleet from Seattle have brought it within your reach.

They call at Yokohama, Kobe, Shanghai, Hong Kong, then beautiful, modern Manila. Explore the charming Old Spanish city. Enjoy splendid hotel accommodations, and visit the dozen delightful resorts all of easy access from the city.

The expense is amazingly low!

Write for Booklet

Send the information blank today for complete information and interesting travel descriptions. You incur no obligation. Write now.

For reservations address local agents or

Admiral Oriental Line

17 State St., New York City
112 West Adams St., Chicago, Ill.

L. C. Smith Bldg., Seattle, Wash.
653 Market St., San Francisco, Cal.

Managing Operators for

UNITED STATES SHIPPING BOARD

Owners of the Vessels

There Are Sailings Every 12 Days:

| | | | |
|-----------------|-------|----------|---------|
| Pres. Madison | sails | Aug. 18 | Oct. 17 |
| Pres. McKinley | sails | Aug. 30 | Oct. 29 |
| Pres. Jackson | sails | Sept. 11 | Nov. 10 |
| Pres. Jefferson | sails | Sept. 23 | Nov. 22 |
| Pres. Grant | sails | Oct. 5 | Dec. 4 |

A INFORMATION BLANK
To U. S. Shipping Board
Information Office C336 Washington, D. C.

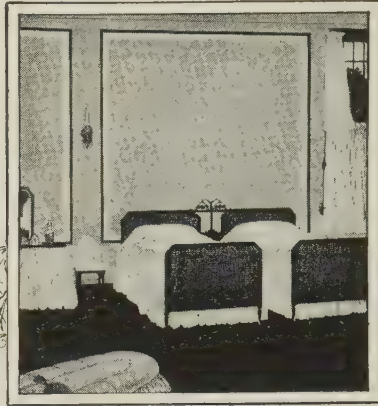
Please send without obligation the U. S. Government Booklet giving travel facts. I am considering a trip to the Orient ☐ to Europe ☐ to South America ☐ I would travel 1st class ☐ 2d ☐ 3d ☐.

My Name _____

My Business or Profession _____

My address is _____

Town _____ State _____



Simmons beds, the Charlton design, shown here in brown mahogany finish

Also in soft green, ivory, old blue and walnut. Prices surprisingly moderate

Henry Ford believes that even a machine needs rest

When asked why he favored short hours for workers, Henry Ford said that no good engineer will run even a machine at the limit of its power and speed for very long.

It hurts the machine. It isn't sentimentalism to take care of machines—or men. It is plain common sense and efficiency.

Sleep recharges the batteries of energy. It repairs and keeps in working order the fine mechanism of the human body. When you are tired or run down, sound sleep winds you up for the succeeding day.

It is good judgment and economy, therefore, to own and use the kind of bedding that will give you deep and restful sleep.

Spare ten minutes tonight to get acquainted with the bed you sleep on. Then go to your furniture dealer's and compare what you are using with the Simmons springs and mattresses he offers in a wide range of styles and prices.

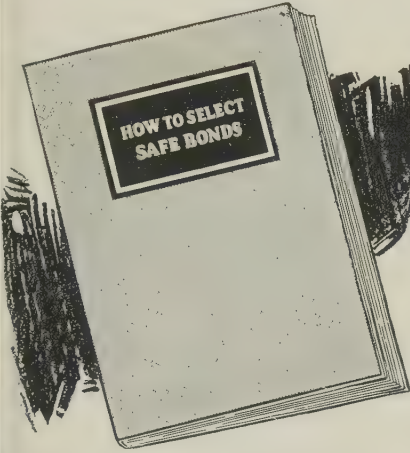
Weigh the facts and decide whether you are getting the energy-restoring rest your living machine needs—and can enjoy now at such moderate cost.

*Write for your copy of "Restful Bedrooms," The Simmons Co., 1347 Michigan Ave., Chicago
In Canada, please address Simmons, Limited, 400 St. Ambrose Street, Montreal, Quebec*

SIMMONS

Beds · Mattresses · Springs

BUILT FOR SLEEP



It Took 38 Years to Write This Important Investment Book!

NOW FREE TO EVERY INVESTOR

Thirty-eight years of intensive experience—thirty-eight years of sound, conservative business practice—thirty-eight years of examining and investigating thousands of investments—were necessary before we acquired the fundamental investment knowledge which we have embodied in this important book.

THIS book tells in clear, definite, simple language the basic principles which influence all investments. It classifies all types of investments so that any one can quickly grasp the fundamental differences—the advantages and disadvantages of each one. It gives the few simple, easy, but very important rules by which insurance companies and other big corporations select their investments—assuring them strong security with a high yield.

It tells you how you may judge the merits of any investment—how you may select the investment best suited to your needs—how you may protect your principal against loss or mismanagement. With the aid of

the very important, very vital information contained in this book an inexperienced investor may go about the selecting of his investments confident that he is getting the same safety as the most experienced investor.

This book is, we sincerely believe, one of the most concise, most informative manuals ever prepared on the subject of investments. It gives, in condensed form, the investment knowledge which we have acquired in our conservative investment experience of over 38 years—during which time no customer has ever lost a penny of either principal or interest on any Forman investment.

GEORGE M. FORMAN & CO.
105 W. MONROE ST. CHICAGO
38 Years Without Loss to a Customer

Geo. M. Forman & Co.,
Dept. 938, 105 W. Monroe St., Chicago.
Please mail me, without obligation, a copy
of your booklet, "How to Select Safe Bonds."

Name
Address
City..... State.....



Do animals obey the Ten Commandments better than men and women?

DOES the bear know by instinct that it is wrong for him to steal from his brother bear? Is the growl of a dog with a bone really a warning to other dogs to respect the command, "Thou shalt not covet!" Did you know that a pack of timber-wolves has been known to punish the wolf-sentinel who repeatedly gave "false witness" about approaching danger? Are the ten great "thou shalt nots" known and observed by squirrels as well as elephants—by bees as well as birds?

Where did Moses get the Ten Commandments? Did the finger of a personal God really write them "on tables of stone" or did the great Hebrew law-giver write them after long, profound observation of the lives of beasts as well as men? Was Moses really a deep student of Nature's fundamental laws as well as a great leader of crowds?

These are fascinating questions. Their answers give to the nature-lover a fresh, vital interest in the lives of all wild creatures. No one but a truly great observer of animal life could have answered them. Yet that is what the famous naturalist-author, Ernest Thompson Seton, has done. In an absorbing little book called "*The Ten Commandments in the Animal World*" he shows you, by actual examples from his notebooks, how every single one of the Mosaic laws are known and enforced in the animal world. Wouldn't this be an absorbingly interesting thing to know? This book is a truly amazing disclosure. It has made enthusiastic nature students out of people who "thought they weren't interested" in Nature.

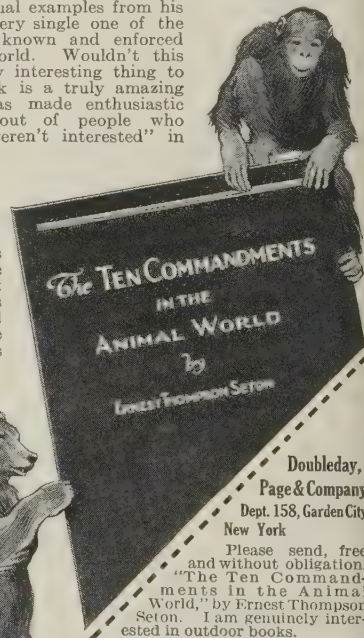
FREE "THE TEN COMMANDMENTS IN THE ANIMAL WORLD," by Ernest Thompson Seton

In order to stimulate an even wider interest in Ernest Thompson Seton's remarkable revelations of the fascinating lives and habits of wild creatures, we have printed an edition of this astonishing little book for *free distribution*. If you do not yet know this great naturalist's writings, you have the first of many great treats coming to you for the asking. We say the *first*, for frankly, we feel that you will be so delighted with Seton's absorbing eye-witness story about how animals enforce the law of Moses among themselves that you will be eager to read more of his fascinating books.

To supply the great and increasing demand for Seton's works, a new edition has been published, at a price that now brings the six beautiful volumes within easy reach of every home. We want to tell you about it, but to send for this free book will involve you in no obligation whatever; no salesman will call on you; it will be left entirely to you to decide whether or not you want to accept the special offer we are now able to make.

In any event, we want as many people as possible to read "The Ten Commandments in the Animal World." Simply mail the coupon in the corner of this page or a letter and the book will be sent immediately.

Doubleday, Page & Company
Garden City Dept. 158 New York



Name.....
Address.....
City.....State.....

Hundreds of words you use are almost the same in French, Spanish and German.

Here are over 50 from a page of a New York paper.

| | | | |
|--------------|---------------|----------------|-------------|
| reaction | eminent | brutal | command |
| conservative | national | police | moral |
| tendency | class | capitalist | revolution |
| illustrate | energetic | administration | conspire |
| contraction | industrial | inspection | conference |
| theory | interest | problem | delegate |
| absolute | organization | commissioner | historical |
| dictator | department | naturally | consequence |
| political | creature | liberal | ideal |
| social | confiscate | aspiration | action |
| ethical | character | aristocracy | agitation |
| practical | person | element | imperial |
| ignore | demonstration | constellation | situation |



No wonder Americans find it so easy to talk and read foreign languages by the amazing new Pelman system!

Everybody wants to be able to talk and read at least one foreign language—either for traveling abroad, or for business reasons. A revolutionary discovery now enables Americans to master French, Spanish or German with surprising ease. Get the FREE BOOK that gives you the most astonishing information ever published about learning languages in the only natural way in your own home.

IF SOMEBODY handed you a foreign newspaper and told you to read it at sight, you would probably say: "Impossible! Why, I don't know a word of any language but English!" Yet the amazing fact is that you do actually know hundreds of words of French, Spanish, and German—without realizing it. Hundreds, yes thousands, of words are almost identical in English and in the three principal foreign languages. Over 50 of them, printed at the panel above, were taken from a single American newspaper page.

What does this mean? Simply that you already have a start toward learning any language you choose, by the easiest, most efficient method ever devised.

This is the Pelman Method of Language Instruction—a wonderfully simple way of teaching that has been enthusiastically received in England, and has just been brought to America. You learn in the simplest, most natural way imaginable—the way a child learns to speak his native tongue—without bothering about rules of grammar at all in the beginning.

First You Learn to Read the Language at Sight

Let us suppose, for example, that you have decided to learn French. The Pelman method works just as simply with the other languages.)

When you open the first lesson of the Pelman method, you will be surprised to see not a single word of explanation in English. But you soon realize that no English is necessary. You find that you already know enough French words to start—words that are almost the same in English—and that you can easily discover the meaning of the unfamiliar French words by the way they "fit in" with the ones you recognize at sight. Your interest is seized and held at once with all the fascination of a game.

In the places where it is necessary, you get the meaning of new words from little pictures of the things the words stand for—but the principle of using words you already know to teach you whole new sentences works so well that you literally read the course from beginning to end in French, and at sight.

And You Begin to Speak Before You Realize It

After only eight to twelve weeks you will be able to read books and newspapers in the language you have chosen—and, almost before you realize it, you will find yourself able to speak that language more fluently than students who have studied it for years in the toilsome "grammar-first" way.

Mr. M. Dawson-Smith, an English student of the Pelman system, writes:

"A short time ago a Spanish lady was staying in the neighborhood. I practiced my Spanish on her, and she congratulated me both on my accent and fluency, and was amazed to hear that I had learnt it all from correspondence. She has lent me several Spanish books which I can read with the greatest ease."

And the remarkable results gained by hundreds of others who have taken the Pelman language courses were not attained by a toilsome struggle with rules of grammar, or by laboriously memorizing long "vocabularies" of words.

Every lesson keeps you interested and fascinated, eager for the next. You pick up the points of grammar that you need automatically—almost unconsciously. It is only after you can already read and speak readily that the subject of grammar

is touched at all—but correct pronunciation and accent are taught from the first lesson—and a remarkable new invention has made this part of your progress astonishingly easy.

Remarkable Book Free

What do you know about the remarkable opportunities that have been opened up since the war to those who know one or more of the great foreign commercial languages? The amazing free book that you can have for the asking tells you all about them. It shows you what a real business asset it is to have another language at your command. The man or woman who knows two or more languages is needed in business more than ever before.

You have had here only a glimpse, a mere hint, of the fascinating and enjoyable way you can now learn any foreign language through the amazing Pelman method. The big, free book gives you a convincing demonstration of the method in operation—actually teaches you to read at sight a page of the language you select to learn!

Whether you now have the desire to learn another language or not, you will be fascinated by the interesting facts about languages that this book gives you.

The coupon below will bring you full information about the Pelman system of language instruction. Sending for it costs you nothing and obligates you to nothing. Mail the coupon today.

The Pelman Institute of America
Language Department Suite L-48
2575 Broadway New York City

The Pelman Institute of America,
Language Department, Suite L-48,
2575 Broadway, New York City.

Please send me full information about the Pelman Method of Language Instruction.

Name.....

Address.....

City..... State.....

I am interested in
☐ French ☐ Spanish ☐ German

These Bas-Relief Lincoln Book-Ends are of a beautiful bronzed metal; they would sell in any store for at least \$1.00; in most stores for \$1.25 or \$1.50. Read below how you may obtain a pair for nothing.



Free—A pair of these Lincoln Book-Ends

This offer is made for the purpose of introducing a new set of thirty World's Masterpieces of the Little Leather Library. Read below the interesting story in back of this astonishing offer.

MOST book lovers have heard of the thirty world's masterpieces published by the Little Leather Library Corporation. Over 20,000,000 of these volumes had been sold prior to 1923. But this result was not achieved overnight. For years every cent that was made over expenses was put back into advertising, in order to acquaint an ever wider public with this opportunity for good reading and self improvement. And this is what finally happened:

Just as the first \$1000 is the hardest for a man to make, so the first fifty thousand sets of those books were by far the hardest to get distributed. After that it became gradually easier. For every set that was sold became a "silent salesman." Their unprecedented value was self evident. Inquiries began to pour in from all over the world. So the second hundred thousand sets were easier to sell than the first; the third easier than the second, and so on.

In other words, that first fifty thousand sets were like the beginning of a snowball rolling down a mountain; once started, it continued to grow to ever greater proportions.

Have You Read These Books?

For a long time we have been at work on an entirely new collection of thirty World's Masterpieces: This is at last ready for publication. It includes the following: *A Tillyloss Scandal*, Barrie; *Finest Story in the World*, etc., Kipling; *Socialism for Millionaires*, Shaw; *On Going to Church*, Shaw; *The Land of Heart's Desire*, Yeats; *As a Man Thinketh*,

Allen; *Christ in Flanders*, etc., Balzac; *The Bear Hunt*, etc., Tolstoy; *Pippa Passes*, Robert Browning; *Sonnets from the Portuguese*, Elizabeth Browning; *Comtesse de St. Geran*, Dumas; *Uses of Great Men*, Emerson; *Memories of President Lincoln*, Whitman; *Snowbound and Other Poems*, Whittier; *The Raven and other Poems*, Poe; *The Murders in the Rue Morgue*, etc., Poe; *Old Christmas*, Irving; *Ghosts*, Ibsen; *The Comedy of Errors*, Shakespeare; *Dream Children*, etc., Lamb; *Irish Melodies*, Moore; *Lancelot and Elaine*, Tennyson; *The Holy Grail*, Tennyson; *The Trial of Socrates*, Plato; *The Importance of Being Earnest*, Wilde; *Pelleas and Melisande*, Maeterlinck; *Mumu*, Turgenev; *The Inferno*, Dante; *A Message to Garcia*, etc., Elbert Hubbard.

Now, in view of our former experience, clearly the wisest policy to follow with this new collection is to get fifty thousand of these sets distributed as quickly as possible.

Do You Want a Pair?

There is a very simple straightforward way to do this. It is to give the first fifty thousand purchasers of this new collection something so extremely valuable—in addition to the extraordinary value inherent in the set itself—that it will be worth their while to obtain this new set at once, instead of waiting. That is the reason for the present offer.

One of the best artists in New York was commissioned to design these Bas-Relief Lincoln Book-Ends. We then went to one of the largest metal works in the East. We gave them an order that enabled them to go into quantity production on this one design, thus cutting the costs enormously.

The result is we are able to offer you a pair of these beautiful, heavy, bronzed

book-ends that would sell in retail stores for from \$1.25 to \$1.50—absolutely free, if you are one of the first 50,000 purchasers of this new set of books!

Remember that these books are exactly the same in quality as the 20,000,000 that have already been distributed. The paper is a white wove antique, equal to that used in \$1.50 and \$2.00 volumes; the type is clear and easily read; the binding, while NOT leather, is a beautiful limp material, tinted an antique copper and green and handsomely embossed, so that even experts sometimes think it is hand-tooled leather. Yet the entire price of these thirty volumes is only \$2.98, plus the few pennies postage.

Sent for Examination

Sooner or later, you will surely want to possess this remarkable new collection of World's Masterpieces. Why not obtain it now, when it is most worth your while to do so.

You need not send any money now. Simply mail the coupon below or a letter. When the package arrives give the postman \$2.98 plus postage. Examine the collection carefully—examine the book-ends—and if you do not agree that this is one of the most remarkable bargains you have ever received, return the set within thirty days, and your money, with postage both ways, will immediately be refunded. Can a fairer offer be made?

Little Leather Library Corporation
Dept. 248, 354
Fourth Ave.
New York

Little Leather Library Corporation
Dept. 248, 354 Fourth
Avenue, New York

Please send me the new set of 30 volumes of the Little Leather Library, and a pair of Lincoln Bas-Relief Book-Ends free. I will pay the postman \$2.98, plus the postage, upon delivery. It is understood, however, that this is not to be considered as a purchase. If the books do not in every way come up to my expectation, I reserve the right to return them any time within thirty days and you agree to return my money.

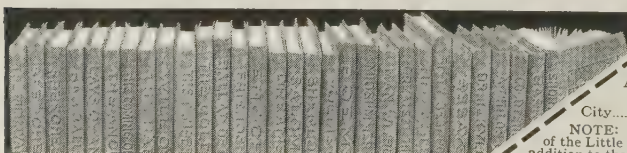
Name.....

Address.....

City.....


State.....

NOTE: We still have a number of sets on hand of the first thirty volumes of the Little Leather Library. The price is \$2.98, plus postage. If desired in addition to the SECOND set, advertised above, simply place X in this square ☐




Nature's Amazing "Inside Story" Now Told by Famous Nature Lovers

Take the path to the fields and woods, where a thousand hours of fascinating pleasure await you—right now! Enjoy Nature's myriad wonders through the "seeing eyes" of eminent Nature writers!

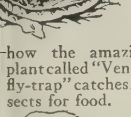


SEE—

- the bird that hangs out a cast-off snake skin to frighten away enemies.




—how the amazing plant called "Venus fly-trap" catches insects for food.



—how the clever crow drops clams to break open their shells.

HEAR—

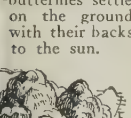
- the woodpecker drumming out "courtship music" on a dead limb.



—all the music of the bird who has six different songs, in his "repertoire."

LEARN WHY—

- butterflies settle on the ground with their backs to the sun.



—why some willow trees are "masculine" and "feminine"—and how they "marry."

WHERE is the man or woman who feels no thrill of sudden joy at the sight of the first robin in Spring? Do you know how wonderfully his little "love nest" is built—of coarse grasses, with an inner wall of mud? Isn't it astonishing to know that "Robin Goodfellow" often provides over sixty earthworms a day for each one of those little yellow mouths for which he is responsible? Isn't it interesting to know that by the end of June Mr. and Mrs. Robin may be raising their second or even their third family? How little we really know about our helpful feathered neighbors—and how absorbing the details of their private lives are!

And the true story about Every Bird, Insect, Flower, and Tree is just as fascinating

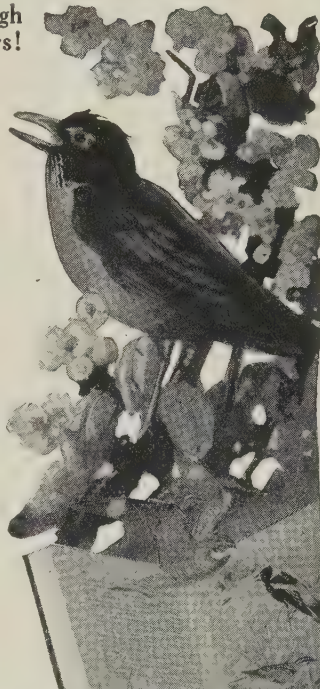
Do you know the wonderful life story of the butterfly? How it hatches from the egg as a tiny caterpillar; how it feeds and grows to full size on the leaves of a favorite plant; how it spins an exquisite silken cradle in which to sleep through the marvelous change that it feels coming on; and then how it bursts forth, with wonderful painted wings! Do you know how insects and plants help each other to live and multiply? Did you ever realize that the shapes, colors and perfumes of flowers make them attractive for certain special insect visitors?

Probably you have often promised yourself a more intimate knowledge of all the fascinating marvels that Nature spreads before you. Are you going to get it *this* year? Get the keen pleasure from Nature that only knowledge can give. Learn to know the name, life and habits of the bird that perches on the fence-rail—of the butterfly that starts up from the grass at your feet—of all the flowers that paint the meadow—and of the trees that rustle in the summer breeze.

Famous Nature lovers will be your guides—they will answer all your questions. Celebrated writers about Nature have worked together to produce the four volumes of the Little Nature Library—the most fascinating and popular Nature books ever published.

1200 Pages of Wonder and Joy

Neltje Blanchan makes birds *live* for you—shows you how to know 124 different feathered friends. Julia Rogers writes about 63 different trees. Clarence M. Weed tells you the wonderful story of over a hundred American Butterflies. And that inimitable writer, Neltje Blanchan, has also contributed a splendid book of 169 wild flowers. Here is a set of Nature books that you cannot afford to be without. And now a great opportunity is offered you to see for yourself, without a penny in advance, the wealth of Nature lore contained in these four fascinating volumes.

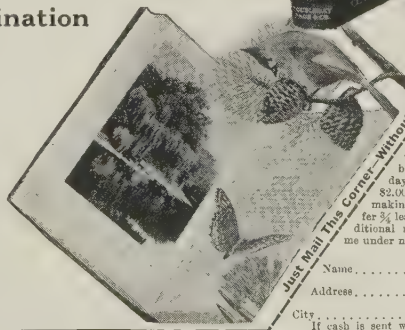


SEND NO MONEY—Free Examination

You are invited to examine the Little Nature Library without cost or obligation. The coupon below brings the books to you for a five days' examination. Four beautiful books, bound in dark green silk cloth. Cover decorations in gold and color illustrations on the covers. Profusely illustrated with 144 full-color plates. 48 black and white pictures. 465 subjects; 1200 pages. The secrets of the Birds, Trees, Butterflies and Wild Flowers interestingly explained that every member of your family will enjoy reading these wonderful books. If you decide to keep the books pay only the special low price at the convenient terms shown on this coupon. But take advantage of the free examination offer NOW before it is withdrawn. Send no money—just the coupon.

Nelson Doubleday, Inc.

Dept. 138 Garden City, New York



Nelson Doubleday Inc.
Dept. 138, Garden City, New York

You may send me the Little Nature Library in four beautiful cloth bound volumes for Free Examination. I will either return the books at your expense in five days, or send you \$1.50 and then \$2.00 a month for three months, making a total of \$7.50. If you prefer 3/4 leather send \$2.00 for one additional month. This coupon places me under no cost or obligation.

Just Mail This Coupon Without Money

Name.....
Address.....
City..... State.....
If cash is sent with order deduct 30c.

How to avoid embarrassing mistakes in English

Are you sure that you speak and write correctly? If you are like most people you are making mistakes every day which hurt more than you know. If you would be sure of yourself in every situation you must be certain that your English is faultless.

EVERY day, every minute you are engaged in an effort to make people think favorably of you. It makes no difference who you are, or what your position is in the scheme of things, you want to advance, you want to step forward and higher. What you use most in this unceasing effort to establish and improve yourself is the English you speak and write. Every time you speak or set pen to paper you create either a favorable or an unfavorable impression of yourself upon others.

Polite society is a harsh taskmaster. It does not permit the slightest relaxation of its rigid commands. And one of its most important customs is the use of clear, concise, correct English. Above all is demanded correctness. And it is very easy to fall into error, for English has acquired thousands of foreign words and phrases that make it a snare for the careless. Clothes and manners are veneers that may gain you some favor for a little time. But your language reveals you as in the searching glare of a calcium light.

How People Judge You

Those who do not know you intimately can judge you only by what you make them think you are. The impression you make depends upon what you say and how you say it. If your English is poor, lifeless, honeycombed with mistakes in grammar, pronunciation, and diction, the very people upon whom you wish to make the most favorable impression will contrarily assume that you are lacking in culture and breeding. But if you can speak English that is correct in every detail, it will be much easier for you to be at ease no matter where you are.

For that reason you very carefully correct any mistakes you discover in your conversation and your letters. But you probably are unconsciously making errors every day. These errors are the more dangerous because not only do they make you lose position, not only do they cause unfavorable impressions, but as you do not know what they are you go right on making them. Cultured people quickly recognize the slightest fault in English, and unless you are sure that your English is absolutely faultless, you will always be ill at ease and self-conscious.

Stop Making Mistakes

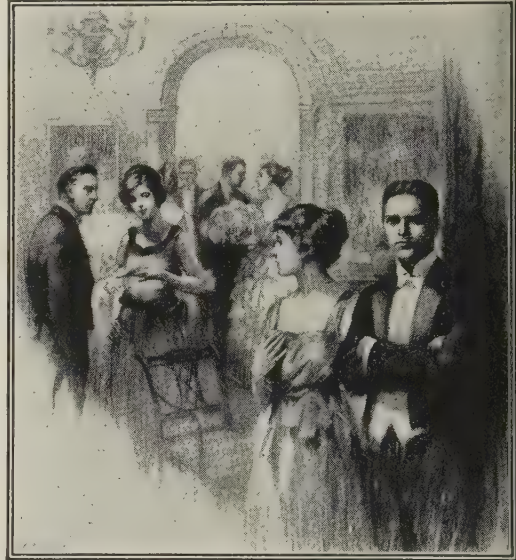
If you would become fully successful you must stop making these errors. You must be sure that the English you use is correct. You cannot hope to attain all your ambitions until you are able to show yourself in the best light at all times. It was long ago proved that the old system in vogue in schools was inadequate, for upon actual test it was found that the vast majority of men and women are only 61% efficient in their knowledge of English. For many years educational experts sought for some method that would overcome this deplorable condition. But no one ever came forward with an easy method to learn correct English, until Mr. Sherwin Cody, who is perhaps the country's best known teacher of practical English, invented a remarkable method that enables anyone to improve his English in only 15 minutes study each day.

A Remarkable Invention

Mr. Cody's invention is so amazingly simple that it is practically automatic. It accomplishes the mastery of English with astonishing rapidity. It is called the 100% Self-Correcting Method.

This astonishing invention upsets all the ancient, worn-out standards of teaching. The useless rules and hard-to-remember, impractical definitions of the old system were so cumbersome and unwieldy that they actually retarded progress. Mr. Cody dispenses with all of them. Instead, he concentrates on the main essentials, and arranges them so that fifteen minutes of your time each day soon gives you as thorough a command of English as those who spend years to perfect their knowledge.

Mr. Cody's remarkable self-correcting system does away



SHERWIN CODY

with every uninteresting and monotonous exercise characteristic of the old school. It is this system that has called forth the highest praise from the best educational experts. This system not only simplifies the whole study of English, not only makes Mr. Cody's course a pleasant game, but it so firmly fixes correct English in your mind that you can never forget it. It concentrates on your errors—it does not bother you about the things you positively know. That is the most wonderful thing about Mr. Cody's course. And once you have taught yourself to use perfect spelling, perfect diction, perfect pronunciation, and perfect grammar you will always use them.

FREE Fifteen-Minute Test and New Book

If you want to write better, stronger letters, if you want your speech to be more convincing and more interesting, if you want to make your language a powerful factor in your life, you must increase your command of words and make your English flawless. Perhaps your English is good—but are you sure? Perhaps you know it is not all it should be—but do you know exactly how far short it falls? It is easy to find out. Simply mail the coupon below, or a postal card, and we will gladly send you the Sherwin Cody Fifteen-Minute Test. See just where you stand. It is so interesting it is like playing a game. Every member of the family will want to take this simple test. Along with the test we will send the correct answers to the questions. We will also mail you our new book "How to Speak and Write Masterly English"—a book that thousands are thankful they have read. Do not turn this page until you have written for the test and free book. Mail coupon or postal card this very minute.

SHERWIN CODY SCHOOL OF ENGLISH
798 Searle Building
Rochester, N. Y.
SHERWIN CODY SCHOOL OF ENGLISH
798 Searle Building, Rochester, N. Y.

Please send me Mr. Cody's free book entitled "How to Speak and Write Masterly English"—also his 15-Minute Test showing me simply and clearly exactly where I stand in English. This places me under no obligation.

Name.....

Address.....

City..... State.....



Miller Bonds financed the Gallat Court Apts.
Miami, Fla.

What Makes a Bond Safe?

IT takes more than mere honesty to create safe bonds for the investment of your money. Skill, experience, and ample financial resources on the part of the investment banker are necessary to guard you against loss.

Miller First Mortgage Bonds, secured by income-earning structures in

Florida cities, are backed by our years of experience in lending money, in judging the value of property, and in watching over each bond, year after year, until it is paid off. If you want to make sure that your money is safe, and that you will receive $7\frac{1}{2}\%$ interest each year, mail the coupon for our free booklet, "The Ideal Investment."

G. L. Miller BOND & MORTGAGE Company

**508 Miller Building, Miami, Florida
Florida's Oldest First Mortgage Bond House**

G. L. MILLER BOND & MORTGAGE COMPANY
508 Miller Building, Miami, Florida

Please send me, without obligation, the booklet, "The Ideal Investment," with illustrated circular describing a bond issue paying $7\frac{1}{2}\%$.

Name

Address

City and State

PUBLISHED MONTHLY BY THE CROWELL PUBLISHING COMPANY AT SPRINGFIELD, OHIO, U. S. A.

THE MENTOR

W. D. MOFFAT

EDITOR

RUTH WOOD THOMPSON, *Assistant Editor*

THE ADDRESS OF EXECUTIVE AND EDITORIAL OFFICES, 381 FOURTH AVENUE, NEW YORK CITY.

THE SUBSCRIPTION PRICE, \$4.00 A YEAR

THE PRICE OF SINGLE COPIES, 35 CENTS

LEE W. MAXWELL
President

THOMAS H. BECK
Vice President

JOHN E. MILLER
Vice President

A. D. MAYO
Secretary

A. E. WINGER
Treasurer

COPYRIGHT 1923 BY THE CROWELL PUBLISHING COMPANY

THE OPEN LETTER



Someone once said that a man that had made two blades of grass grow where only one had grown before had not lived in vain. If doubling the blades of grass is a worth-while thing to do—and it surely is—what shall we say of the man that has doubled the size and improved the quality of the fruits and flowers; the man that has produced a bigger and better potato, a richer, finer cherry and plum; and has taught the armored cactus the lesson of peace by coaxing it to renounce its cruel, piercing spines, so that it may be handled with impunity and eaten with relish?

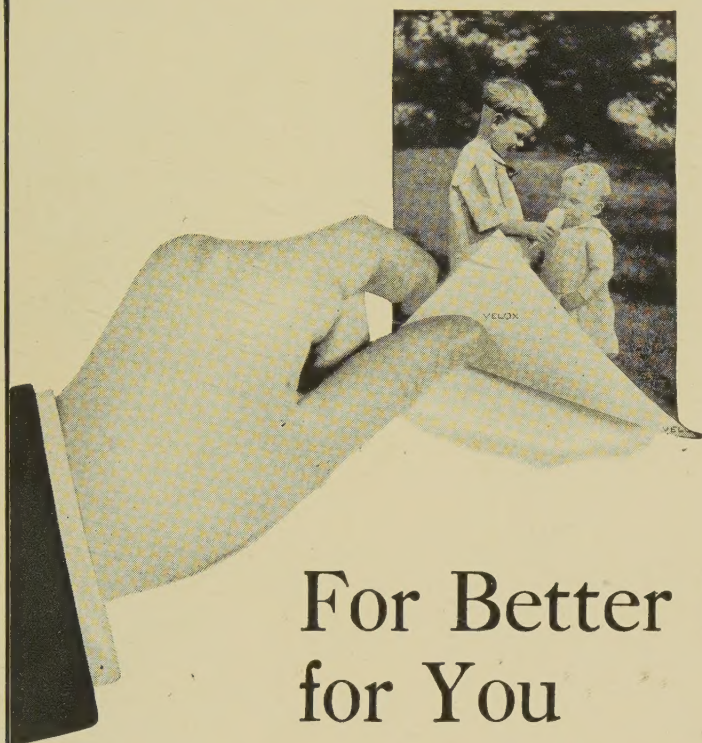
Most humans are so fully engaged in their own affairs that they give little thought to the business of helping others. Life means, for many, a struggle for survival, in which the fittest wax fat and grow strong, and the weakest go to the wall. In that struggle there are many degrees of worth and worthlessness. The man that makes the most and best of himself does a good thing; the man that helps others to make the most and best of themselves does a better thing; and the man that trains the growing things of the earth to make the most and best of themselves—thereby working good both for nature and mankind—does a supremely good thing, for he renders a far-reaching practical service to the world. It is only fitting, therefore, that the people of California, who have for years followed Luther Burbank's creative work at close hand, should give him now a full and enthusiastic public expression of appreciation.

We have been interesting ourselves recently in asking who were the "Greatest Men in the World," and who the "Greatest Men in America." H. G. Wells has given answers to the first question—puzzling us somewhat in one or two of his selections—and Dr. Robinson has named his "Seven Great Men of America." Answers to questions of this sort have value chiefly in reflecting the mind of the man that gives the answers. There is nothing final in the judgment of any man on this subject. The term "great" is so indefinite that it is doubtful whether any two judges, however well informed, would agree in selecting "the Seven Greatest Men." The difference would be in their point of view toward what constitutes greatness—but it is just this difference in the point of view of each judge that makes their answers both interesting and instructive.



There is a quality in man that is more definite than that of "greatness"—a quality by which the men of history might be judged with some degree of decision, and be set in a definite class. That quality is *human service*. It would be profitable to know who are the men that have rendered the Greatest Service to Humanity in the History of the World. That is the question The Mentor has asked a well-known historian—a popular and learned writer whose opinion will carry unquestioned authority. His answers will be printed in a forthcoming number.

W. D. Moffat
• Editor



"A trademark is a mark by which the wares of the owner are known in trade. Its object is two-fold: to protect the public from imposition The trademark brands the goods as genuine, just as the signature to a letter stamps it as authentic." *Coxe, J., in Shaw Stocking Co. v. Mack, 12, Fed. Rep. 707, 710.*

For Better Prints for You

To protect our Kodak customers and to protect those Developing and Printing establishments which, by using the best materials, endeavor to give their customers the best possible results, we have made Velox paper identifiable. The trade name "Velox" is printed, faintly, on the back of every sheet—readable but not obtrusive.

Negatives made by the professional photographer under the soft and well-modulated light of the studio demand one kind of paper and those made by the amateur under harsh light conditions require another kind. No one paper can properly serve both purposes.

Velox is the only photographic paper made exclusively for printing from am-

ateur negatives. It exactly meets the requirements of amateurs and amateur negatives.

If your finisher uses the best possible paper—even though it costs him a little more—it is an indication that he is using the best possible equipment and chemicals, and employing capable workmen. In short, your films have been left in careful hands.

Look for "Velox" on the Back

Eastman Kodak Company, Rochester, N.Y. *The Kodak City*

NOTE: The Trade-mark on every sheet does not apply in Canada as yet.



To the Father of the American Boy

The kind of man your boy will be is being determined now, during those boyhood years when Dad is a fellow's hero. When Dad takes time to talk about good health—well, that means something.

Teach your boy now to take proper care of his teeth. Then give him a dentifrice that is safe to use for a lifetime.

Free from grit and harmful drugs, Colgate's Ribbon Dental Cream is an ideal dentifrice. Its specially prepared, non-gritty chalk loosens clinging particles from the enamel. Pure and mild, its vegetable-oil soap washes them away. Large tube 25c.

BOYS: If your Dad hasn't seen this page, show it to him and write us what he says. We will then send you a generous sample tube of Colgate's Ribbon Dental Cream—just the right size to carry in your hike kit.



COLGATE & CO.
Dept. 318
199 Fulton St., N. Y. C.

If your wisdom teeth could talk
they'd say, "Use Colgate's"

Truth in Advertising Implies Honesty in Manufacture